Computer Horizons
Book 6

Fundamentals

Paintbrush

Multimedia

Internet

Windows

BASIC

Word

Logo

S. Addy

ACES Infotech Pvt. Ltd.

Computer Horizons
Book-6

SUBHASHISH ADDY

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PREFACE

The subject of computers is approached with feelings of excitement, awe, fascination and intimidation. In business, industry and scientific research the computer is an essential tool, and as time goes by, they have an increasingly familiar place in everybody's lives; at home, in schools and at work.

This book deals in a straight forward say with the Fundamental aspects of the computer, Binary Number System, Windows Operating System, Paint Application in Windows, Word Processing and a study of Multimedia operation and Internet. Computer jargon is explained and advanced features in LOGO as well as elementary level programming in BASIC has been introduced.

Although, this book is meant for pupils of class VI, as a follow up of the text written for class V, it could also be treated as an independent text, and general readers will also find it useful.

Happy Computing !

Subhashish Addy

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Chapter 5 : Windows Operating System

Chapter 6 : PAINT : Drawing Application In Windows

Chapter : 1
Computer Fundamentals

We will learn about

☺ **Technological Evolution of Computers**
☺ **Classification of Computers**
☺ **Characteristics of Computers**
☺ **What is a Computer**
☺ **Elements of a Computer**

1.1 Technological Evolution of Computer

Throughout history man has constantly looked for ways to make calculations easier. In the ancient world, the Abacus, or counting frame, was commonly used. Beads or stones were threaded onto a number of rods held in a frame. The first rod represented units, the second tens, the third hundreds and so on. Calculations were done by moving the beads along the rods.

In certain parts of Asia the abacus is used even today and expert users can obtain answers to calculations as quickly as with a pocket calculator.

An important development in the history of computers was the invention of Slide Rule in the early part of the seventeenth century. Numbers were represented on a special scale, known as a logarithmic scale, on two rulers and the results of multiplications and divisions could be read by sliding the rulers next to each other.

In 1642 a Frenchman called Blaise Pascal invented the first mechanical calculator. Numbers were represented as teeth on a set of gear wheels. Numbers could be added and subtracted by simply turning the wheels.

In 1821, an English Mathematician Charles Babbage began to build the Difference Engine to calculate mathematical tables. This was never built but his ideas were important as he had designed the first automatic computer.

In 1880, Herman Hollerith invented the first counting machine in USA. He used the idea of curd punching from Jacquard.

In late 1943, the need arose for computing artillery firing charts. So Electronic Numerical Integrator And Computer (ENIAC) came into being. John Von Nuemann was a mathematician assosiated with the development of ENIAC.

In 1948 three American scientists Burdeen, Brattan and Shockley invented a device which could perfrom the functions of a valve which was smaller, cheaper, less fragile,used less power and did not get hot. Thus **transistors** were introduced.Transistors replaced the valves from 1953 onwards.

In 1960, an American Jack Kilby invented a way of putting more than one transistor onto a single piece of silicon. This was first known as <u>I</u>ntegrated <u>C</u>ircuit (IC).But as it was made from a piece of silicon it became known as the **silicon chip** or just **chip**.

The increased complexity of IC led the scientists to the invention of **Microprocessor**. In 1971, all the main electronic components of a computer went onto a single chip called the **Microprocessor**.

This brings up us upto the present day when it is possible to build computers of enourmous capacity and reliability in very small space, at an affordable price.

A pictorial representation of the evolution of computers
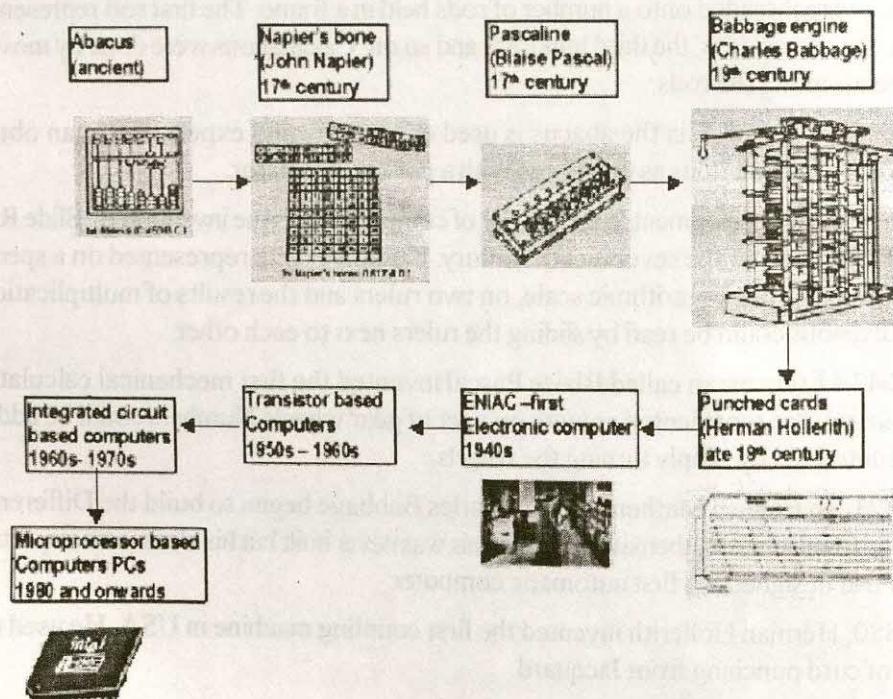
However, scientists categorised the evolution of computers from 1937 till date into different generations. A Tabular representaion of "Computer Generation" is shown below.

Generations	Main Processor	Advantages / Disadvantages
First (1937-58)	Vacuum tube	Slow operating speed and restricted computing capacity Very large space requirement Limited programming capacity Time taken to do a job : 1 Mili Sec.
Second (1959-64)	Transistor	Computer became much smaller in size. More reliable and greater processing capacity, Storage capacity of computers also increased. Time taken to do a job: 1 Micro Sec.
Third (1965-71)	I.C.	Improved secondary storage device. I.Cs have higher speed, larger storage capacity and lower price. Time taken to do a job: 1 Nano Sec. Many high level language like BASIC COBOL etc. were developed at this time.
Fourth (1971 onwards)	L.S.I.C* / V.L.S.I.C	Entire computer circuitry on a single single silicon chip are called "Microprocessor". Computers have faster data processing capacity, they are expensive and substantially reducted in size. Time taken to do a job :less than 1 Nano Sec.

* **L.S.I.C** stands for **L**arge **S**cale **I**nlegrated **C**ircuit
  V.L.S.I.C stands for **V**ery **L**arge **S**cale **I**ntegrated **C**ircuit.

1.2 Classification of computers according to Size

They are traditionally divided into three main categories:
Mainframe computer
A mainframe computer is a large, powerful computer.
Their main characteristics are:
☺ Mainframes are mostly used in large organizations.
☺ The size and speed of a mainframe is very much greater than that of a minicomputer.

- ☺ They have large storage capacities
- ☺ Mainframes process data at a very high speed.
- ☺ They support a wide range of peripherals.
- ☺ They can make use of a wide variety of software.
- ☺ They are sensitive to variations in temperature ,humidity, dust, etc., and are hence require air-conditioned rooms.

Mini Computer

A minicomputer is a computer that is more powerful than a microcomputer, but not as powerful as a mainframe. It is often used in a business where it is to have a mainframe.
- ☺ They offer a limited range of peripherals.
- ☺ Limited software can be used.
- ☺ It offers a facility for direct operation of the machine by the end user.

Micro Computer / Personal Computer

A micro computer is a small computer often called a personal computer. The most important part of a microcomputer is a microprocessor, which is sometimes called its brain.
- ☺ They are affordable and easy to use.
- ☺ They have limited input and output capacities.
- ☺ They have low storage capacity.
- ☺ They are designed to be used by one person at a time.
- ☺ The most important part of a microcomputer is a microprocessor, which is sometimes called its brain. Peripherals such as a keyboard is used to input the data and visual display unit is used to get the output, are important parts of a microcomputer system.
- ☺ Hard disk and Floppy disk drives are used to enter and store data and programs.

Supercomputer

Supercomputers are the most powerful computers in the world, and have the following characteristics.
- ☺ They are used to process complex scientific jobs.
- ☺ Supercomputers are widely used in meteorological offices where weather patterns are predicted by manipulating vast amounts of data.
- ☺ Supercomputers are manufactured by very few companies in the world. Cray Research ETA Systems Inc. in United States and Fujitsu, Hitachi and NEC in Japan are the primary manufacturers of super computers.
- ☺ Famous supercomputers are Cray –1, Cray X-MP, Cray-2 and ETA-10. These computers can perform 10 to 100 billion calculations per second.

1.3 Characteristics of Computers

Speed

The computer was invented as a high-speed calculator. This has led to many scientific projects which were previously impossible. If we want tomorrow's weather forecast today, meteorologist can use the computer to perform the necessary calculations and analysis.

Accuracy

The computer's accuracy is consistently high. Errors in the machinery can occur but, due to increased efficiency in error detecting techniques, this seldom leads to incorrect results.

Reliability

Computer output is generally very reliable, subject to the condition the input data entering the computer should be correct and the program of instructions should be reliable and correct.

Versatility

Computers seem capable of performing almost any task, provided that the task can be reduced to a series of logical steps for e.g., a task such as preparing the payroll or controlling the flow of traffic can be broken down into a logical sequence of operations. Yet the computer itself has only limited ability and, in the final analysis, actually performs only four basic operations:

- It exchanges information to the outside world via I/O devices.
- It transfers data internally within the CPU.
- It performs the basic arithmetical operations.
- It performs operations of comparisons

Storage

A computer can store a vast amount of information in its storage location for future use which can be recalled at any time.

Logical decision

A computer is capable of comparing data, both numeric and non-numeric; depending on the results, it makes certain decisions. These decisions are logical decisions which help the computer in deciding its way of action.

Super Efficiency and Automation

Unlike human beings computers can work for hours and produce error free results. Computers process data with the help of instructions fed into them, that is it work automatically. Computers manipulate data according to the instructions and they never get tired.

1.4 What is a Computer

The word "Computer" comes from the word "compute" which means to calculate. A computer is an electronic device, which stores and processes data to give meaningful information. Processing is done with the help of instructions given by the user, which are also stored within the computer.

Data : Data refers to all the basic elements that can be produced or processed by a computer. Data is a collection of facts and figures which has to be processed by some processing system, (whether a human being or a machine) to be understandable.

Information : It is the processed form of data, which makes some sense and helps in reaching a conclusion.

```
DATA            PROCESSING          INFORMATION
(INPUT)   ---►  CONVERTS DATA  ---► (OUTPUT)
                INTO
                INFORMATION
```
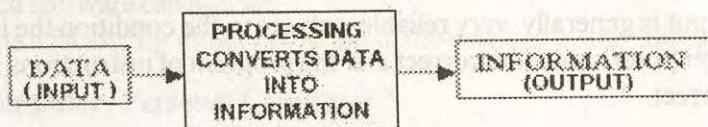
Computer system is made up of the following components

(i) Input device (ii) Central Processing Unit (iii) Output device

Input device

Input means putting the raw data through input device into the processing device Input Unit allows us to communicate with the computer. An input unit converts the numbers, alphabet or other signals into the internal binary code (will be discussed later). Keyboard, mouse, joystick, light pen are the examples of input unit. We will discuss about the input device in details later.

Central Processing Unit

Another important component of the computer system is known as **CPU**. It accepts instructions through keyboard, stores them into memory and later on exectes them. It can be also thought of as the "brain" of the computer. It performs all the calculations and control the overall activities of the computer.

CPU consists of three components :

(i) Arithmetic Logic Unit

(ii) Memory Unit

(iii) Control Unit

We will discuss about these components in details later.

Output device

The devices, through which we get the processed information or the desired result are known as the output devices. There are a variety of output devices which return the information given by the user. The most popularly used output devices are Visual Display Unit (VDU) or monitor, printers, plotters etc.

1.5 Elements of a Computer

There are two elements which work together to make up a computer system, namely Hardware and Software.

In a computer system both software and hardware are equally important.

Hardware is the physical part of a computer, something which we can touch, feel with our hand. Technically, we can define the Hardware as all the equipment and electronic circuits that make up the computer viz- the keyboard, screen, disk drive, printer etc. However, the hardware can do nothing without the software.
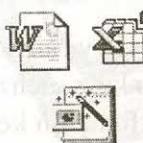
Software is the set of operational instructions to the hardware, which tells the computer what to do, how to act, how to generate a picture, how to print a biodata and other documents and so on.

Technically we can define the software as the information that the computer needs to work on. The information can be instructions, which tell the the computer what to do, or the data that is used by the instruction. For example a computer to perform addition. The actual numbers that are entered into the computer for addition are the **data**. A set of instructions that performs a task is known as a **program**. You cannot touch the software; it can only be stored on floppy disk, hard disks drive, Compact Disks(CDs), just the way music is stored in cassettes and CDs.

Let us try to understand the hardware parts of a computer system with their functions:

The three main parts of a computer are :

(i) Input Device

(ii) Central Processing Unit

(iii) Output Device

Input Units : The input unit is an important part of the computer through which the input unit turns the information into a series of electronic pulses which the computer

can understand and pass on to the Central Processing Unit.

Examples of input device : Keyboard,joystick,lightpen,punch card, barcode reader etc.Now we will discuss about the keyboard in details.

We can communicate with the computer. Input units are like "eyes" and "ears" The keyboard of a computer resembles an english typewriter with some special keys added. With the help of this keyboard we can have a conversation with the computer.Like a typewriter , the keyboard has capital letters and small letters. When a key is pressed, the lower case symbol is printed. For typing upper case characters, the SHIFT LOCK or SHIFT key is depressed.The following characters, (letters, digits, punctuation marks, symbols, etc) are used in the keyboard.

1. Alphabets of the Roman script

A,B,C,D,E,....................Z (26 characters)

2. 0,1,2,3,..........9(10 characters)

3. Special symbols like +,-,*,/,( ),$, etc.

The special keys

A number of special keys whose function are given below.

Caps Lock	If this key is pressed te characters are displayed in upper case on the screen.
Shift	There are two shift keys on the keyboard.This key can not be used independently. It can be used with other keys such as alphabetic, double symbol (#,$,%,&,* etc.), function key etc..When the Caps Lock key is off, if the shift key is pressed with alphabetic keys uppercase letters are generated, whereas when the Caps Lock key is on, if the shift key is pressed with alphabetic keys, lower case letters are generated.
Return / Enter	This key is used most frequently. When any instruction or message is typed, it is not executed or stored till the Return or Enter key is pressed.
Backspace	When this key is pressed the last character typed is erased from the video screen. If it is held down, it erases further characters till it is released. Normally this key erases the characters to the left of the cursor.
Tab	This key moves the cursor eight space to the right.

Delete	This key deletes the character on which the cursor is. It moves from left to right.
Escape	This key interrupts the processing of the computer. It is used to stop a program which is running.
Ctrl	This is a control key. If this key is pressed along with other keys, different actions are generated. (for e.g. Ctrl key+C copies the selected text on the clipboard)
Alt	This is another control key. If this key is pressed along with other keys, different actions are generated.
Cursor Control Keys	There are four cursor control keys viz. Up, Down, Right and Left. These keys enables us to move the cursor around the screen as per the given directions.

Scanner

A scanner is an **input device** that transfers information from a piece of paper into a computer. To do this, the scanner sends a beam of light to the page and then measures the amount of light reflected back. White reflects all light, black reflects no light and each colour reflects a different amount of light. The amount of light for each portion is given a digital code which is sent to the computer. The document is laid face down on the glass. The light moves backwards and forwards. There are various types of scanners : (i) Flatbed scanner (ii) Handheld scanner (iii) Drum scanner.

Mouse

A mouse is a device which is used with computers as an input device. The Mouse is connected to the computer by a cable. It consists of buttons on top and a ball underneath. When the ball is moved over a surface, such as a table top , the ball rolls and a marker appears on the visual display unit. By pressing the buttons on the mouse we give instructions to the computer. There are various types of mouse available. They can have two buttons, three buttons or scrolling feature on them.
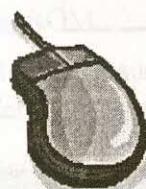
Mouse buttons are used to :
- ✓ Move icons
- ✓ Select menu commands
- ✓ Choose options
- ✓ Start programs
- ✓ Resize windows

Central Processing Unit : Central Processing Unit (CPU) is the processing device of the computer. It is here that the actual work is done. The CPU is like the 'brain' of the computer. It takes information from the input unit and memory and uses or processes it according to the instructions given. It may put information into the memory or give results to the output unit.

CPU

ALU	CU	Memory Unit
Arithmetic and	Control Unit	
Logic Unit		
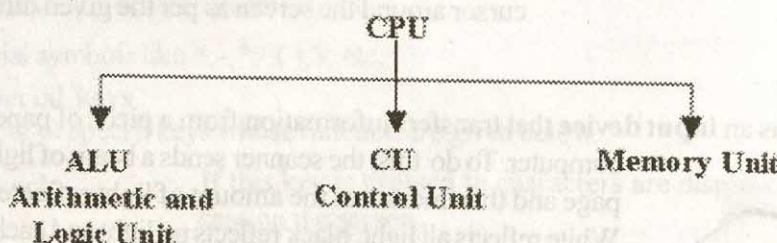
The following figure indicates the movement of data in a computer.

ALU

CU

INPUT

OUTPUT

MEMORY

PROCESS
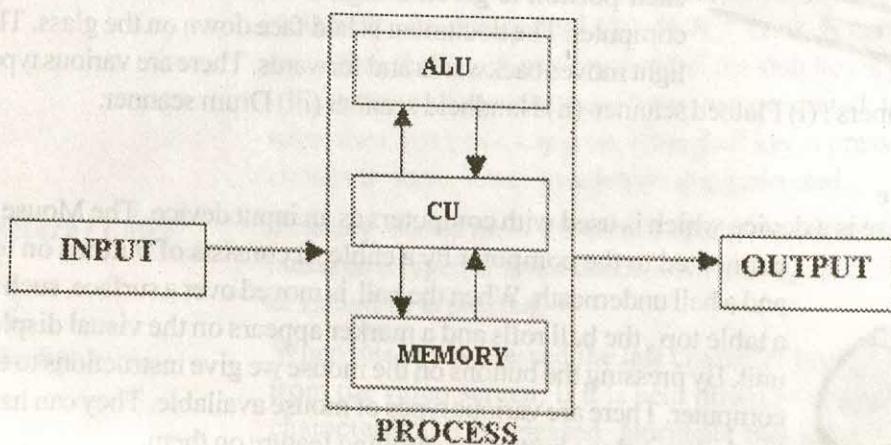
ALU : In the ALU, calculations such as adding, multiplying etc. of numbers are carried out. The ALU can also carry out logical operations like comparing two numbers to see which is the larger. A modern computer can perform a single addition in nano seconds. (1 nano second = 10^{-9} sec)

Control Unit: It controls the overall activities of a computer system. It gets information from the input unit, sends information to the output unit or transfers information to or from the computer's memory.

It is important that everything is done in exactly the right order and at the right time, so there is an accurate clock within the computer which is connected to the control unit.

```
                          Memory
            ┌───────────────────┴───────────────────┐
    Internal /Primary                        External /Secondary
            │                                         │
            │                                         │
     Magnetic Core                            Semiconductor
        Memory                                   Memory
                                                     │
                                          ┌──────────┴──────────┐
                                        RAM                    ROM
```
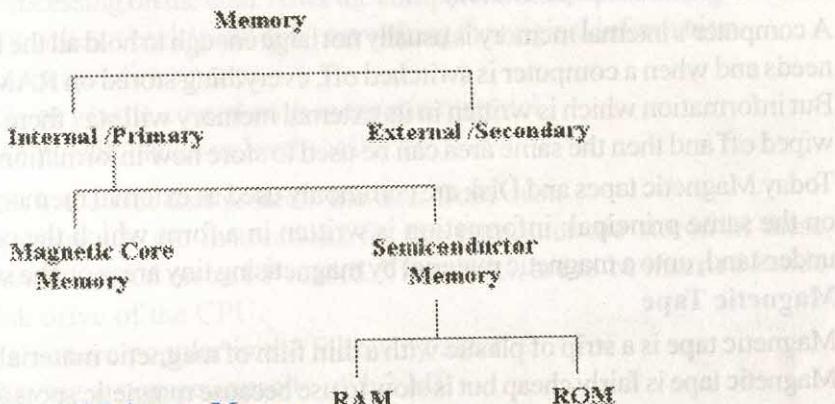
## Internal Memory / Primary Memory

In a PC, internal memory is usually contained in silicon chips. It holds instructions and data, which the computer is currently working on, and which can be accessed by the CPU whenever required. Internal memory needs to work very rapidly because the speed of the CPU is very high and requires information to be readily available. Internal memory are of two types :

(i) Magnetic Core Memory
(ii) Semiconductor Memory

Semiconductor Memory is of two types:
(i) RAM
(ii) ROM

RAM (**R**andom **A**ccess **M**emory) is an electronic memory which is used to store data and instructions from the operating system and any program you are using. RAM stores information temporarily. If the power is interrupted, even for an instant the information is lost for ever. The CPU accepts information from RAM as and when required, processes it and returns to RAM.
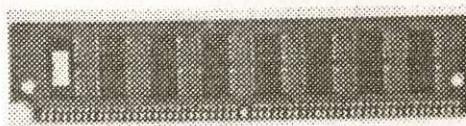
ROM stands for **R**ead **O**nly **M**emory. ROM or Read Only Memory hold sets of instruction which tell the microprocessor what to do. For instance, a ROM will tell the processor how to recognise which key has been pressed and how to light up the screen. Information stored on a 'ROM' can be 'read', it can not be erased or added to because when the chip is manufactured it is made non-writable.

External / Secondary Memory

A computer's internal memory is usually not large enough to hold all the information it needs and when a computer is switched off, everything stored on RAM disappears. But information which is written in its external memory will stay there for ever until wiped off and then the same area can be used to store new information.

Today Magnetic tapes and Disk are commonly used as external memory. Both work on the same principal; information is written in a form which the computer can understand, onto a magnetic material by magnetising tiny areas on the surface.

Magnetic Tape

Magnetic tape is a strip of plastic with a thin film of magnetic material on one side. Magnetic tape is fairly cheap but is slow to use because magnetic spots are laid down in rows along the length of the tape and so to find a particular piece of data, the computer must start at the begining of the tape and read through the entire data until it reaches it.

Disks

Similarly, disks are made of a magnetic coated material. The surface of each disk is marked with invisible circular tracks, and data is recorded as magnetic spots following these tracks. Disk drives are used to read and write information on them. Data stored on a disk can be found much faster than with tape because the head of the drive which reads and writes magnetically, can go immediately to the track on the disk where the required information is stored. A computer can handle only that amount of information which can fit into its memory at one time, which means that when we turn off the computer its memory diappears along with all the information worked upon so far. Therefore it is necessary to copy information to either floppy disk, hard disk or compact disk (CD)

Generally, we use three types of disk, namely

(i) Floppy Disk (ii) Hard disk (ii) Compact Disk or CD.

Now we will discuss about these disks in details.

Floppy Disk : Floppy disks are used as a storage device. We store small amount of information on floppy disks and large amount of information on hard disks because the capacity of a floppy disk is much less than a hard disk.

In order to make the computer read a floppy disk's information, you must insert the disk into a disk drive. The computer cannot use data right from the disk. It copies the data to its memory where it undertakes the necessary processing on the data. After the computer finishes processing the data in the memory it writes it back to the disk overwriting the original information.

A floppy disk consists of two parts :
(i) a thin circle of plastic coated with magnetic material
(ii) a protective plastic jaeket or hard shell.

The disk jacket is a cover that protects the disk from dust.
The actual program i.e. the instructions for the computer are stored in these disks, like sound is stored on an LP record. These diks, are to be inserted inside the Floppy disk drive of the CPU.
Floppy disks are more popular in the following sizes
(i) $5\frac{1}{4}$ inch having a storage capacity of 1.2 MB
(ii) $3\frac{1}{2}$ inch having a storage capacity of 1.44 MB
Now a days we use only $3\frac{1}{2}$ inch floppy disk.

Hard Disk : You have learnt about floppy disks as storage media. You must have noticed that floppy disks take some time to read and write information from them; moreover they have limited storage capacity. Hard disk were invented to solve this particular problem. A hard disk is a large, spinning plate that is connected inside our computer. The computer reads and writes to this large spining plate as if it were a floppy in a disk drive. Hard disk drive stay inside the computer, sealed and proctected from dust, magnets, etc. Hard disk can hold information which can be stored on hundreds of floppy disks. The computer can also read from or write to the hard disk more swiftly.
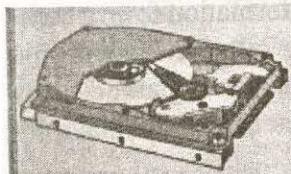
Over the years hard disks have been available in various storage capacities e.g.20 MB in the earlier days to 20 GB in recent times.In future the capacity will increase further with the technological developments.

CD : Now-a-days **C**ompact **D**isks or CDs have become a very popular storage CD ROM device is the acronym for **C**ompact **D**isk **R**ead **O**nly **M**emory and is used to store information. CDs or Compact Disks are made of lightweight plastic like material with chemical coating on one side. The data is stored on this surface of the CD in various forms like music, games, programs, movies etc. They are actually optical disks and use light to read the data from the disk. To read information from a CD we require a CD ROM drive, to write data on a CD we require a CD-Writer. A CD can store about 650 MB of data or 74 minutes of audio.
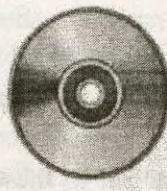
Output Device : They constitute those parts of a computer system which display or print the end results or processed information. Therefore an output device can be anything through which the computer can give the result of the work that it does. Examples : Monitor or Visual Display Unit, Printer, plotter etc

Monitor
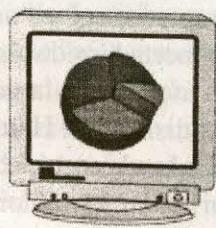
You can communicate visually with the computer through the monitor.Monitor, also known as **V**isual **D**isplay **U**nit (VDU) is used to show or display ,information from a computer on a screen.Monitors can be either Monochrome (Black & White) or Colour.Monitor use a **C**athode **R**ay **T**ube (CRT). VDU needs a graphics card to display pictures.

Printer
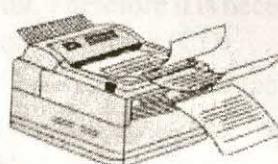
The equipment which prints information on paper, through the computer, is known as the printer. The printers which we generally use are Dot Matrix Printers.The name refers to the grid of dots used to create the image. Now a days the printers used in business are Laser printers which are more expensive than Dot Matrox printers and produce higher quality text.

Chapter : 2
Binary Number System

We will learn about

☺ **Introduction**
☺ **Binary digits**
☺ **Counting and Calculating**
☺ **Binary Conversion**
☺ **Binary Addition**

2.1 Introduction

You are already acquainted with the decimal number system since your childhood as it is the most commonly used number system all over the World. This number system uses ten digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 for performing necessary calculation. But this system is not suitable for the computer applications. So we need a system with only two digits 0 and 1 so that these two digits could be easily represented by on and off state.

Base is the number of digits which can occur in each position. Let us consider a decimal number 475. Here 5 is in the unit position. The other digits that can occur in that position are 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. So we see that total ten numbers can occur in the unit position. This is true for any other position such as tens, hundreds etc. So the base for the decimal system is ten. The number system with base 2 is called binary number system. The word 'binary' has come from the prefix 'bi' which means two. Any information as numbers and letters even pictures can be coded in this way.

2.2 Binary Digits

Binary number system uses combination of two digits 0 and 1 to code all information. Each 0 and 1 is called a Bit, short form of Binary digit. We usually put bits into groups of eight and call this group a byte. The eight bits of a byte can make 256 different combinations of 0 and 1, with which we can represent a particular character. Half of a byte is called a nibble.

A character can be :
- Any digit from 0 to 9
- A letter from A to Z or a to z.
- A symbol *, /, -, +, #, $ etc.

0	1	0	1	0	0	1	1

BIT

NIBBLE = 4 BITS

BYTE = 8 BITS
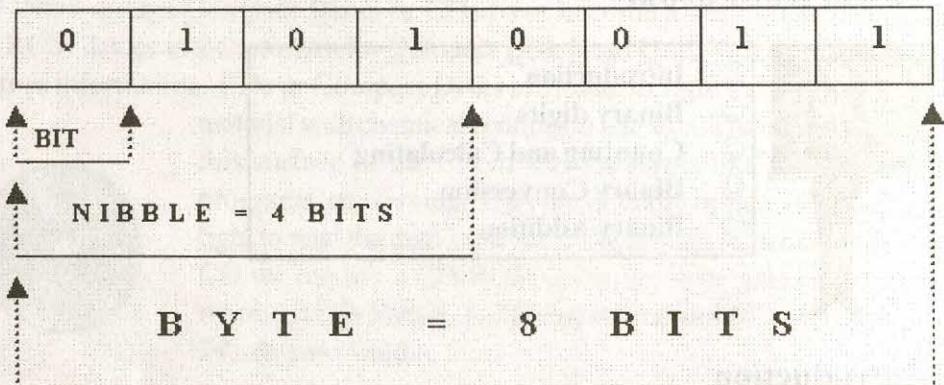
The circuits of a computer works with these bytes. Data are stored in memory in form of bytes. The ALU in the CPU can calculate with and compare them. To know how this is done we have to know more about the binary codes.

1 Byte		= 1 character
1 Kilobyte (KB)	= 1024 Bytes	= 1024 characters
1 Megabyte (MB)	= 1024 kilobytes	= 1048576 characters
1 Gigabyte (GB)	= 1024 Megabytes	= 1073741824 characters

2.3 Counting and Calculating

The number system that we generally use has ten digits. These digits are 0,1,2, 3, 4, 5, 6, 7, 8, 9. The system which uses these numbers is known as the Decimal System. The computer has only two digits to work with which are 0 and 1. These two digits are called Binary Digits or simply Bits. The number system in which we are using these two digits is known as the Binary Number System.

Computer don't have five senses through which people learn about the world. Instead, they receive the information by means of input devices such as keyboard, joystick, light pen etc. Computer do their "thinking" in a special language made up of electrical ON. When the switch is OFF there is no current and it is to be 0 (zero). When the switch is ON, there is current and so it is said to be 1 (one).

So the computer needs only two digits to be able to count and calculate. Its numerals are written in base two. That's why the binary number system is also referred to as a base two system and the decimal system is known as a base ten system.

ON
(Pulse)

ON
(Pulse)

OFF
(No Pulse)

OFF
(No Pulse)
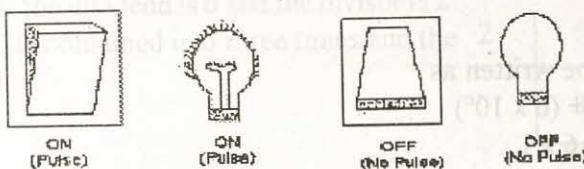
A number system enables us to understand the manner in which we use numbers. The system that we use in our daily life is the decimal system. In this system, we use digits fron 0 to 9 to represent numbers. We count in terms of tens, which is why this system is called the decimal system.

2.4 Binary conversion

In a number made by using more than one digit, each digit is assigned a place value, that is a unit digit, a tens digit, a hundreds digit and so on. The value of this number is arrived at by multiplying the digits with their place values and then adding them all up. For example the 76 is 7 x 10 + 6 x 1= 76. The number 716 is 7 x 100 + 10 x 1 + 6 x 1 = 716.

The weights assigned to each of the places is 1,10,100,1000 ,10000 etc. These numbers can be represented by using the powers of 10 as 10^0, 10^1, 10^2, 10^3 and so on. The meaning of using the powers of 10 is that instead of writing the full value of the place as 100, we write 10 x 10 = 100. The use of powers helps us to write a bigger number in an easy and simple way.

The power of 10 are shown below:

10 to the power of 0 , $10^0 = 1$

10 to the power of 1 , $10^1 = 10$

10 to the power of 2 , $10^2 = 10 \times 10 = 100$

10 to the power of 3 , $10^3 = 10 \times 10 \times 10 = 1000$

10 to the power of 4 , $10^4 = 10 \times 10 \times 10 \times 10 = 10000$

10 to the power of 5 , $10^5 = 10 \times 10 \times 10 \times 10 \times 10 = 100000$ and so on

Therefore , we can write 76 as

$(7 \times 10^1) + (6 \times 10^0)$

$= 7 \times 10 + 6 \times 1$

$= 70 + 6$

$= 76$

Similarly , 716 can be written as

$(7 \times 10^2) + (1 \times 10^1) + (6 \times 10^0)$

$= 7 \times 100 + 1 \times 10 + 6 \times 1$

$= 700 + 10 + 6$

$= 716$

4	3	2	1	0	←Place number
10^4	10^3	10^2	10^1	10^0	←Place value
0	0	7	1	6	

The place number always starts from 0. The place value, as you can see, is derived from the place number directly. By using the concept of the place value, we can form any value that we want.

If we use only two digits, instead of the ten digits used in the decimal number system, we say that we are using the binary number system.

In the case of the binary number system, we are concerned with only two digits, that is 0 and 1. By using these two digits and the concept of the place number and value, we can write any value thet we want. The place values are formed by using the powers of 2 instead of 10.

The place values that are formed with the various place numbers are :

2 to power of 0, $2^0 = 1$

2 to power of 1, $2^1 = 2$

2 to power of 2, $2^2 = 2 \times 2 = 4$

2 to power of 3, $2^3 = 2 \times 2 \times 2 = 8$

2 to power of 4, $2^4 = 2 \times 2 \times 2 \times 2 = 16$

2 to power of 5, $2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$ and so on.

Conversion from Decimal to Binary

Conversion from decimal to binary requires repetitive division by 2. Say we want a binary equivalent of 6. Follow the steps given below :

Step 1 : At first the dividend is 6 and the divisor is 2. We find that 2 is contained in 6 three times and the remainder is 0.

$$2 \underline{)\, 6}$$
$$3 \qquad 0(Rem)$$
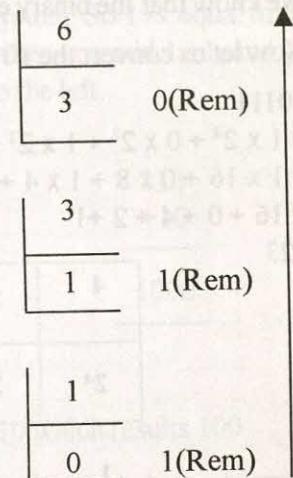
Step 2 : In the second step the dividend is 3 and the divisor is 2. Here divisor goes 1 times and the remainder is 1.

$$2 \underline{)\, 3}$$
$$1 \qquad 1(Rem)$$
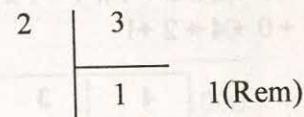
Step 3 : In the third step the divedend is 1 and the divisor is 2. It goes 0 times in 1 and left the remainder 1.

$$2 \underline{)\, 1}$$
$$0 \qquad 1(Rem)$$
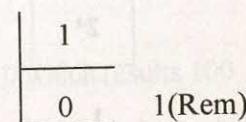
So, when we express the decimal number 6 in its Binary equaivalent we mention only the remainders starting from down.

i.e $(6)_{10} = (110)_2$

Remainders

2	18	
2	9	0
2	4	1
2	2	0
2	1	0
	0	1

$(18)_{10} = (10010)_2$

Remainders

2	23	
2	11	1
2	5	1
2	2	1
2	1	0
	0	1
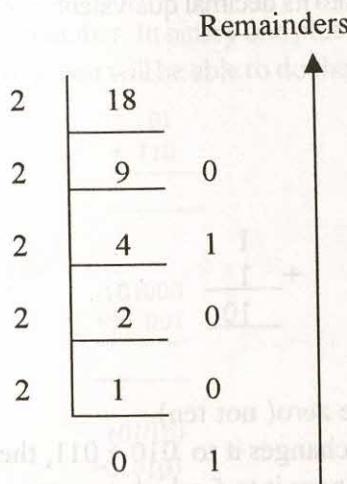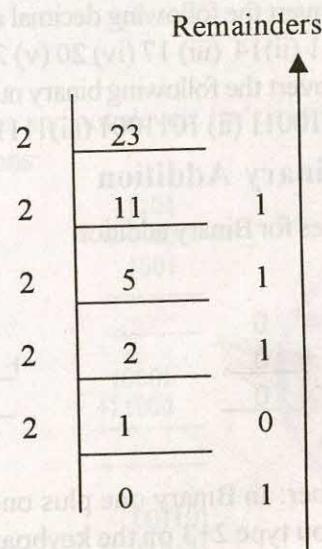
$(23)_{10} = (10111)_2$

So we see that to convert a decimal number to a binary number we have to divide the decimal number by 2 repeatedly till the devidend is 0.

Conversion from binary to decimal number

We know that the binary equaivalent of decimal number 23 is 10111.

Now let us convert the 10111 to its decimal equaivalent.

10111

$= 1 \times 2^4 + 0 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$

$= 1 \times 16 + 0 \times 8 + 1 \times 4 + 1 \times 2 + 1 \times 1$

$= 16 + 0 + 4 + 2 + 1$

$= 23$

4	3	2	1	0	
2^4	2^3	2^2	2^1	2^0	◄ ------Place value

The top row is labelled ◄ ------Place number

1   0   0   1   0

Do it yourself

A. Convert the following decimal numbers into its binary equaivalent.
    (i)11 (ii)14 (iii) 17 (iv) 20 (v) 25 (vi) 56 (vii) 64 (viii) 79 (ix) 83 (x)99
B. Convert the following binary numbers numbers into its decimal quaivalent.
    (i)110011 (ii) 1011001 (iii)11111

2.5 Binary Addition

The Rules for Binary addition :

```
    0              0              1
+   0          +   1          +   1
-----          -----          -----
    0              1             10
```

Remember: In Binary one plus one is equal to one zero(not ten).
When you type 2+3 on the keyboard the computer changes it to $010 + 011$, then performs addition and gets the result 0101, and changes it to 5 which appears on the screen.

| 2 (010) | + | 3 (011) | → | 5 (0101) |

In the binary system you must remember, that though 1+1 does equal to 2 it cannot be written as " 2" as this digits does not exits in the binary system. So 1+1 equal to the next higher representative number 10 (one zero). Also when you add 1 +1, and get the answer 10 (one zero), it means 0 with 1 carry over to the left.

Let's do some binary additions:

```
    01              10            110
+  010           + 100           +10
-------          -------         ------
   011             110           1000
```

How to add 10 + 10 in Binary

```
10  ┌─Here in the first step we are addding 10 with 10 which results 100
    │
10  ├─In the next step 100 is adddded with 10 which results in 110 in binary.
----│
100 │
+10
----
110
```

Remember: In binary one plus one is equal to one and not eleven. Isn't it interesting?

Now you will be able to do the following additions:

```
   101            111           1101
+  110           +101          +   10
------           -----          ------
                  111            1001
```

```
 101000          001001         10001
+001001          +110101        +11000
-------          -------         ------
```

```
 101010          110011         001101
+010101          +001111        +110101
-------          -------         ------
```

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Chapter : 3
Advanced features in LOGO

We will learn about

☺ **Revision of Procedure**
☺ **Using Variables in a Procedure**
☺ **SETSCRUNCH**
☺ **Positioning the turtle**

You have already learnt the use of various primitives and procedures in the previous classes. Now we will discuss about the use of variable in a procedure and the use of advanced primitives.

3.1 Revision of Procedure

A Procedure may be explained as a group of commands, which is defined by a name. We can execute the procedure any number of times just typing its name. In computer jargon "Procedures" are generally referred to as programs. They comprise of three components as given :

    i. Title
    ii. Body
    iii. End

TITLE

While writing a procedure, the TITLE should get precedence over the other two parts. The title line appears first. It begins with the primitive TO, which is followed by the name you want to give to the procedure.
e.g.: TO POLYGON(if you are writing the procedure for drawing a polygon)

BODY

It is made up of all the primitives required to draw a given figure.
e.g.:

REPEAT 5[RT 20 RT 360/5]

END

The last part of a procedure is the END command which conveys to the turtle that all the primitives have been given and the procedure is now complete. The primitive for ending a procedure is END.

After you have keyed in the primitive END, press the ENTER key. The monitor will display the message:

POLYGON DEFINED

Let us see the example of a procedure :

TO POLYGON
      REPEAT 5[RT 20 RT 360/5]
END

Nested Procedure

When a procedure is too long, it becomes difficult to identify which part of the drawing is done by which set of primitives. One way to reduce the length of a procedure is to write several small procedure which can be linked to the master or main procedure. Then by writing the name of the master procedure you can draw an entire picture.

Example:

TO STAR
   REPEAT 5 [FD 40 RT 144]
   HT
END
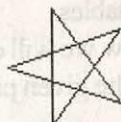
TO STARDESIGN1
   REPEAT 6 [FD 25 STAR BK 25 RT 72 FD 10]
   HT
END

TO STARDESIGN2
   REPEAT 10 [STAR RT 36]
   HT
END
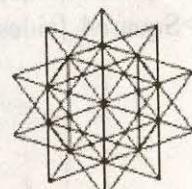
TO STARDESIGN3
   REPEAT 18 [FD 8 STAR RT 8]
   HT
END
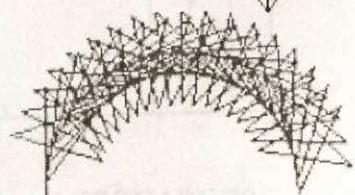
3.2 Using Variables in a Procedure

Variable means which changes. In Logo, variables are used in procedures. You have already learnt the advantage of using the REPEAT command. To avoid repetitive use of REPEAT commands while drawing pictures we can use PROCEDURES. The same picture can be recalled just by typing the procedure name. If there is more than one procedure we have to use nested procedure. When several procedures are mentioned in one main procedure, it becomes a nested procedure.

In LOGO variable names may be of any length made up of any combination of letters, numbers, or the special characters like !,#,% except operaters (+,-,*,/,=, etc.), brackets, parenthesis and single quote ('').

There are two types of variables in LOGO, namely, Local Variables and Global Variables.

Local Variables: The variables defined in procedures without using the MAKE(will be discussed later) command, are called local variables. They can be utilized only in the procedure in which thay are defined. These variables have value as long as the procedure, in which they are used, is being executed. We shall now illustrate the use of variables.

Now we will discuss the use of local variable.

In the given picture, the sizes of the squares are not similar to each other.

To SQUARE
>Square1 [sides of 10]
>Square2 [sides of 30]
>Square3 [sides of 50]
>Square4 [sides of 70]
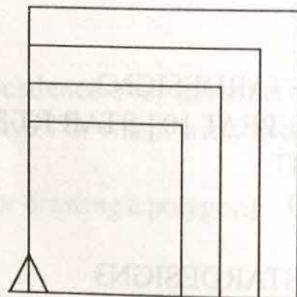
Initially Square1,Square2,Square2,Square4 are to be defined.

Square1,Square2,Square2,Square4 are the small procedures clubbed together in a main procedure named **SQUARE.**

Now the same work will be more easy just by using a variable in the procedure.

How to use a local variable?

```
?TO SQUARE :SIDE
>REPEAT 4[FD:SIDE RT 90]
>END
```

☺ Just beside the procedure name a colon(:) must be given and then the variable name.(i.e .SIDE).

☺ There should be no space between colon(:) and the name.

☺ The variable name must appear in the Title line as well as in the body of the procedure.

☺ Do not put a blank space in between command and the variable name.

How to call a Procedure using a variable?
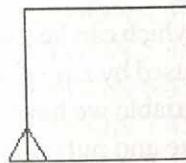
Step 1: ?SQUARE 10
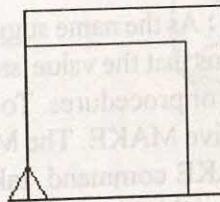
Step 2: ?SQUARE 30
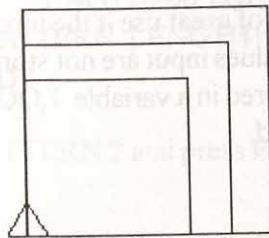
Step 3: ?SQUARE 50
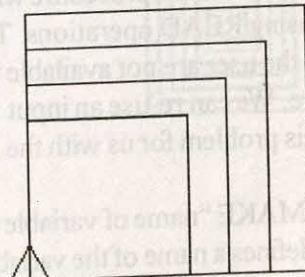
Step 4: ?SQUARE 70

Just by calling the program name followed by a blank space and the value of the variable we can get square of different sizes in different times.

Using Several Variable Names

More than one variable can be used in a procedure. Suppose for a rectangle two variables have to be used. One is for length and the other one is for width.

TO RECTANGLE: LENGTH: WIDTH
>REPEAT 2 [FD: LENGTH RT 90 FD:
WIDTH RT 90]
>END

Now call the procedure
? RECTANGLE 40 10
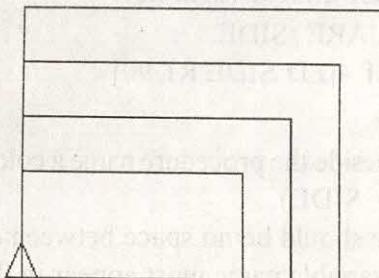
First it will draw the bigger one and then onwards. So instead of writing the same primitive we can just change the value of the variable and according to that we will get the picture.

Global variables : As the name suggests, these are the variables which can be used globally. This means that the value stored in such variables can be used by any of the LOGO primitives or procedures. To store a value into a global variable we have to use LOGO primitive MAKE. The MAKE command takes a value and puts it in a variable. The MAKE command takes two inputs. The first input to the MAKE command is the variable name which has to be preceded by double quotes("). The second input to the MAKE command is the value which we want to store in the variable. As we know LOGO can work with procedure which can be given inputs. LOGO can also halt a procedure while it is running and let the user type in inputs. This is done using READ operations. These operations are not of great use if the inputs given by the user are not available to be reused. i.e. if the values input are not stored anywhere. We can re-use an input value only if it can be stored in a variable. LOGO solves this problem for us with the help of MAKE command.

Syntax MAKE "name of variable the value of the variable
MAKE defines a name of the variable using the name of the first input and assigns the second input as the value of that variable.

MAKE "NUMBER 25 puts 25 in the variable: NUMBER
MAKE "COLOR "BLUE puts BLUE in the variable: COLOR

We can put a value into a variable directly while using the MAKE command. For instances, you can type MAKE "size 10. If you can type **PR: size** logo will print 10.

First let us define a frequency used procedure to a polygon.

```
TO POLYGON:NUM:SIZE
>REPEAT: NUM [FD: SIZE RT 360/: NUM]
>END
POLYGON IS DEFINED
```
POLYGON 5 60 will give the output of a pentagon with sides of 60 units.
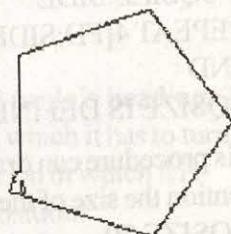
With the help of a program we can draw many polygons

```
?POLYGON 3 45
?POLYGON 4 45
?POLYGON 5 45
?POLYGON 6 45
?POLYGON 7 45
?POLYGON 8 45
```
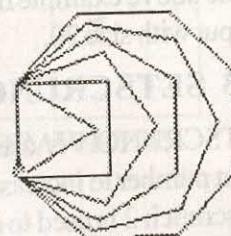
```
? TO PATTERN: LENGTH
>FD: LENGTH LT 90
>IF: LENGTH=60 THEN STOP
>PATTERN :LENGTH+2
>HT
>END
PATTERN 2 and press ENTER key
```
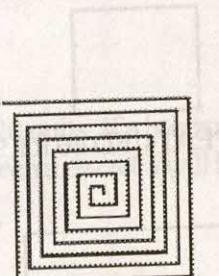
?TO SPIRAL
?REPEAT 18[FD:SIDE RT 10]
>IF:SIDE=8 THEN STOP
>SPIRAL:SIDE+1
>HT
>END

Type SPIRAL 1 and press Enter key.

TO SQSIZE:SIDE
>REPEAT 4[FD:SIDE RT 360/4]
>END
? SQSIZE IS DEFINED

This procedure can draw squares of any size.
Mention the size of the sides you want.
? SQSIZE 20

In the above example if you mention 6 instead of 4 you will get a HEXAGON as an output with size 20.

3.3 SETSCRUNCH

SETSCRUNCH is used to change the height of a design. This command requires an input number to increase the height. SETSCRUNCH 1 is taken as the normal height. Setscrunch 2 is used to obtain double the normal height. Similarly to obtain half the normal height you have to give SETSCRUNCH .5.
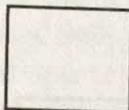
REPEAT4[FD 40 RT 90] HT
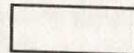
SETSCRUNCH .5
REPEAT 4[FD 40 RT 90]HT
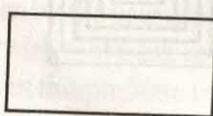
REPEAT 2[FD 20 RT 90 FD 50 RT 90]
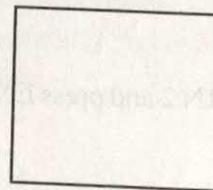
SETSCRUNCH 2
REPEAT 2[FD 20 RT 90 FD 50
RT 90]

3.4 Positioning the turtle

The turtle's position on the screen and it's heading are known as the state of the turtle. The turtle heading is the direction in which the turtle is pointing. Knowing the turtle's state is useful when drawing complex designs.

When the turtle is pointing straight up the heading of the turtle is 0. When it points to the right it's heading is 90, straight down it is 180 and to the left it is 270. The range of heading is from 0 to 359. The command DRAW , HOME and CS set the turtle's heading to 0.

SETHEADING

The command SETHEADING or SETH is used to set the turtle's heading. The command SETH is given with the number of degrees through which it has to turn. The command RT and LT turn the turtle starting from the position in which it is already heading. The command SETH always starts from 0 position.
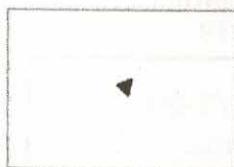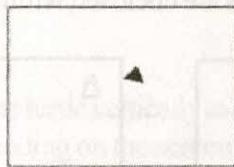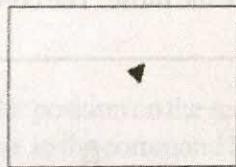
DRAW RT 45	RT 90	DRAW RT 45
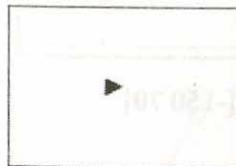
SETH 90

The X axis of graphics screen is 160 units and the Y axis is 320 units. If a horizontal and a vertical line is drawn through the home position of the screen the screen will look as follows:

```
                              Y
                              |
                              |
                              |
                              |
       -X  - - - - - - - - - -+- - - - - - - - - -  X
                              |
                              |
                              |
                              |
                             -Y
```
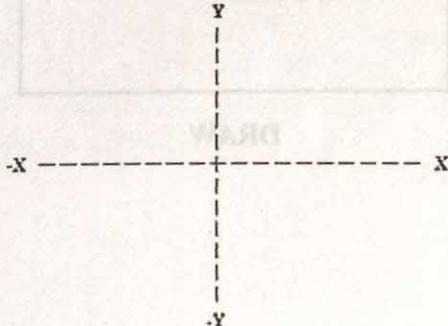
The horizontal line is called the X axis and the vertical line is called Y axis. The position of any point on the screen is given by two numbers called its co-ordinates. The first number gives the horizontal distance from the centre of the screen and is called the X co-ordinate. The second number gives the vertical distance from the centre of the screen and is called Y-coordinate.

The co ordinate's of the home position is [0,0]. The X co-ordinate of any point on the right side of the X axis is positive and any point on the left side of the Y axis is negative. Similarly, the Y co-ordinate of any point above the X axis is positive and any point below the X axis is negative.

SETXY, SETX, SETY

The command SETXY moves the turtle to a particular position on the screen. The input to the SETXY command are the co-ordinates of at the point to which you want to move the turtle. The co-ordinates are enclosed within the square brackets.
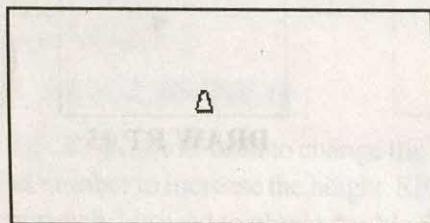
DRAW PU
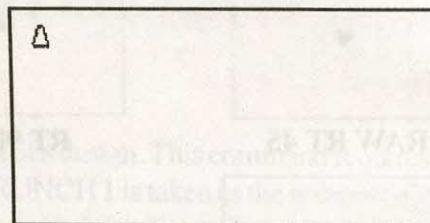
SETXY [-150 70]
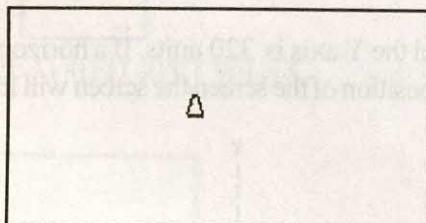
DRAW
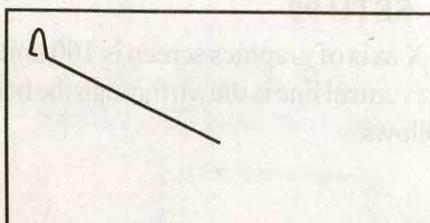
SETXY [-150 70]

The command SETX is used to move the turtle horizontally to the left or right without changing the turtle's heading or its vertical distance from the home position (Y co-ordinate). The input to the command SETX is the co-ordinate of the point to which we want to move the turtle.
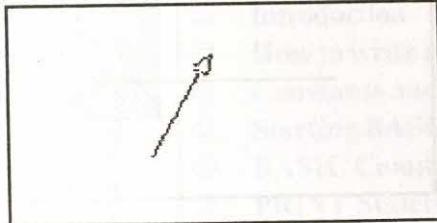
DRAW
RT 30
FD 40
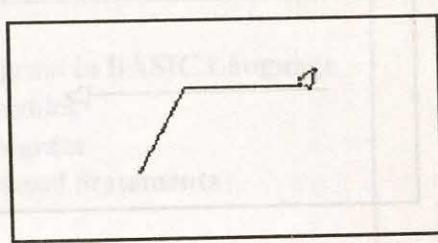
SETX 70

The command SETY moves the turtle vertically to a particalur position on the screen.It does not change the turtle's heading on the screen.The input to the command SETY is the Y co-ordinate of the point to which we want to move the turtle.
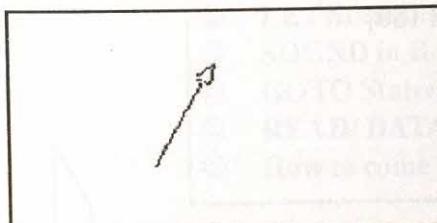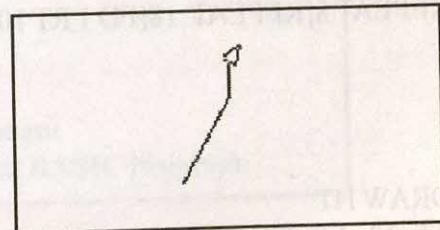
DRAW
RT 30
FD 40

SETY 50

SETHEADING TOWARDS

The command TOWARDS is used with the SETH command to turn the turtle towards a particular point on the screen. The input to the command is the co-ordinate of the point towards which we want to turn the turtle.
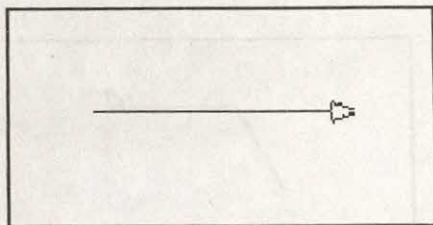
DRAW RT 90 FD 100
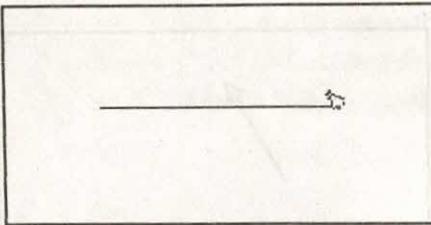
SETH TOWARDS [20 80]

Examples

```
DRAW HT
PU SETXY[-70 30]
PD
RT 180
REPEAT 8[REPEAT 18[FD 1 RT 10] SETH 180]
```

```
DRAW HT
RT 30  FD 30
SETY –40
BK 40
HOME
```
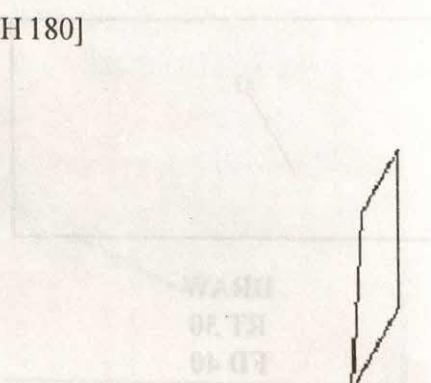
Chapter 4
Programming with BASIC

We will learn about

☺ **Introduction**
☺ **How to write a program in BASIC Language**
☺ **Constants and Variables**
☺ **Starting BASIC Program**
☺ **BASIC Commands and Statements**
☺ **PRINT Statement**
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☺ **Using COMMA with PRINT statement**
☺ **Using SEMICOLON with PRINT statement**
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☺ **LET Statement**
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☺ **GOTO Statement**
☺ **READ/ DATA Statement**
☺ **How to come out from BASIC Program**

4.1 Introduction

BASIC is one of the computer languages through which you communicate with the computer. BASIC is an acronym for <u>B</u>eginners <u>A</u>ll Purpose <u>S</u>ymbolic <u>I</u>nstruction <u>C</u>ode. The name itself implies that it is simple and easy to learn.

4.2 How to write a program in BASIC Language

In order to write a program we have to write a set of instructions and give certain data to the computer to work. These instructions and data are made up of letters, digits and symbols. These are entered in the computer in the form of letters (A to Z), numbers (digits 0 to 9) or special characters (such as +, –, *, /, $, etc.) or a combination of numbers, letters, special characters through the keyboard.

In case the data contains only numbers then it may be termed as **Numeric Data** e.g. 10,55,63 etc.

In case the data contains a combination of letters, numbers, special characters it is termed as **Alphanumeric Data** e.g. B2$, A16

4.3 Constants and Variables

In our daily lives we come across both these words very often. The word "constant" generally implies anything which does not change at any given time or in any condition. Whereas the word "variable" implies anything which is subject to change with time or condition i.e. your name is constant whereas your weight is variable. While writing BASIC programs you have to deal with constants and variables.

Variables are temporary memory locations whose contents can change during the program executions.
Constants, on the other hand, remain unchanged during the program execution.

The word constant means "which is fixed and doesn't change" and the word vary means "to change".

CONSTANT refers to that type of data whose values remains the same throughout the program.

There are two types of constants in BASIC.
(i) Numeric Constant (ii) String Constant.

(i)**Numeric Constants** consist of numbers which have fixed values and hence do not undergo any change. These numbers can be integers (whole numbers) or real numbers (decimal numbers). These are primarily used for carrying out mathematical calculations. i.e.3727, +63, –19 (integers), 39.9, –5.5, 2.3 (real numbers).

Remember: In case a number is negative, a minus sign "−" should be used before it, but a plus sign "+" in case of positive numbers is optional.

Special character like comma(,) space( ) are not allowed in Numeric Constants. 3,48 and 8 342 are invalid numeric constants.

Remember: In case of a real number, other than the plus or minus sign only decimal points can be used.

(ii) **String Constants** may be referred to as those fixed or unchanging data which are non numeric in nature and are represented by a combination of letters, digits, or special characters. These are enclosed within quotation marks.

String Constants comprise of digits which cannot be used for mathematical calculations. Any special characters, except the quotation mark can be used as string constants i.e.

"NETAJI SUBHASH CHANDRA BOSE"
"INDIA"

VARIABLES as the word suggest, vary during the execution (at RUN time) of a program. It can be any letter of the alphabet (as you have used in your algebra exercise to represent a quantity). For example, if you type **Test = 32** then the computer stores the number **32** in the variable **Test**. Now if you type **Test = 55** it replaces the previous **32** and stores the new value i.e **55**. Thus the most recent value is the value of the variable during execution of a program.

There are two types of variables:
(i) Numeric Variables   (ii) String Variable

(i) **Numeric Variables** can store only numeric values which take part in an arithmetic operation. As in the example given above, Test=32, the word "Test" represents numeric variable and 32 represents a numeric value or constant. A numeric variable should start with an alphabet. It can be single letter or a series of letters followed by a digit. Some valid numeric variables are B, SUM, VOLUME, A21 etc.

A numeric variable name must begin with a letter but it can be formed of both numbers and letters like A21.

It should not contain any special characters like, : + (plus), blank space etc.

The length of a variable name varies from system to system which usually ranges 1 to 8.

Some invalid numeric variables are 2A. (The first character should be an alphabet), A 1 (space is not allowed)

(ii) **String Variables** can store alphanumeric (character + number) values. A string variable can be any letter of the alphabet followed by a dollar sign.

Some valid string variables are B$, D21$, NAM$.
Invalid variables are E $ (space is not allowed), X+YZ$(special character are not allowed, $CAT(should start with an alphabet).
Let us see the following example :

X$= "RAHUL"

Here X$ is a string variable and the name RAHUL which is a string constant is stored in the string variable.

The first character in a string variable name must be a letter but this may be followed by letters or digits.

A string variable name should end with a dollar sign ($).

While assigning a string constant it should be enclosed within quotation marks ("RAHUL")

The length of the string variable may be upto 255 characters but it depends on the computer you are using.

Numeric digits can also be assigned as string constants but they will not take part in any arithmetic function.

Do it yourself

1. Define a constant. Give examples.

2. Define a variable. Give examples.

3. Tick True or False as applicable.

(i) 4 x 7 is a variable_____(True / False)

(ii) Y$ is a variable _____(True / False)

(iii) Roll_No is a variable _____(True / False)

(iv) A numeric variable ends with a $ sign_____(True / False)

(v) A string variable should start with an alphabet and may contain any number_____.(True / False)

(vi) Special characters like #(hash), comma(,), space( ) are not allowed in numeric constants _____.(True / False)

4. Fill in the blanks:

(i) The length of the string variable may be upto _____.

(ii) A string constant should be enclosed within_____.

(iii) Constant means _____ whereas variable means_____.

(iv) $ADD is a _____variable.

(v) The full form of BASIC is _____.

(vi) Values are assigned using _____ variables.

(vii) _____ are not allowed in variables.

(viii) Numeric values assigned as a string can not take part in _____ operations.

5. Which of the following are valid or invalid variables names :

(i) COUNT   (ii) 5TH   (iii) 22ND$

(iv) X5$ (v) ADOLLAR   (vi) A$

4.4 Starting a BASIC Program

Let us see a simple BASIC program:

10 REM TO PRINT THE WORD COMPUTER ON THE SCREEN : ←⏎

20 PRINT "COMPUTER" ←⏎

30 END ←⏎

RUN

COMPUTER

Ok

This is a complete BASIC program consisting of 3 lines. The purpose of this program is to display the word COMPUTER on the screen.

You will notice that each line starts with a number called the LINE NUMBER. In a specific program all line numbers are unique.

Line numbers usually begin from 10 and continue in steps of 10 (example 10,20,30,40). They should be in ascending order i.e. the next line number should be greater than the previous one.

In Line No.10, we find a REM statement

☺ **REM**   REM gives a heading or a name to the program so that the program can be easily identified. The full form of REM is REMARKS. This helps the users to understand the structure of the program when reading the program. Such statements are not executed or processed by the computer. The REM statement is optional but it is a good habit to include it in the program.

In Line no.20, we find a PRINT statement.

☺ **PRINT**   PRINT is a BASIC statement, which displays on the screen whatever, is mentioned after the word PRINT. In the above program the string constant "COMPUTER" is shown on the screen.

In Line no.30, we find the END statement.

☺ **END**   END statement is the last statement of the BASIC program. This indicates that the program is complete.

In the above program at the end of each line there is a ←⏎ sign. This sign represents the RETURN key. Remember to press the RETURN key at the end of every line, otherwise it will not be recorded in the computer's memory. If you have completed your program and you want to see the result or output of the program you have to use the command RUN.

When a program has been typed in, it is stored internally in the computer and it remains there until a new program is input or until the computer is switched off. While the program is stored in the computer you can run it any time by typing RUN and pressing the RETURN key.

Just below the output or result Ok is displayed on the screen. This Ok is the BASIC prompt, which means that the computer is waiting for the next command (You will remember the LOGO prompt is a ? sign).

Points to Remember:

☺ Each program instruction must begin with a line number.

☺ A good BASIC program should start with a REM statement and finish with an END statement.

☺ When you have typed, modified a line, do not forget to press the RETURN key.

☺ Line number should not be repeated in a program.

Do it yourself

1. Fill in the blanks:
   (a) Each line of a program should begin with a _____.
   (b) _____ statement gives a name to the program.
   (c) On pressing the ____ key the line is recorded in the computer's memory.
   (d) Line number should be in _____ order.
   (e) The _____ command gives the result of the program.

2. Find out the errors in the given programs:
   (a) 20 REM TO DISPLAY THE SENTENCE HOW ARE YOU ON THE SCREEN.
       10 PRINT "HOW ARE YOU?"
       30 END
   (b) 10 END
       20 REM TO DISPLAY THE WORD MILLENIUM ON THE SCREEN
       30 PRINT "MILLENIUM"
   (c) 10 PRINT END
       20 REM TO FIND OUT THE ERRORS
       15 Ok

4.5 BASIC Commands and Statements

You have been acquainted with certain commands like RUN, LIST, NEW, AUTO, and CLS. These are called SYSTEM COMMANDS in BASIC. Statements are instructions to the computer and must start with a line number, whereas system commands do not require line numbers.

4.6 PRINT Statement

The PRINT statement in BASIC displays the information on the screen, given through the keyboard. With the help of the PRINT statement you can print words, figures, sentences, numbers, calculations and even draw designs on the screen.

PRINT statement with words, figures and sentences:

The word(s), figure(s) and sentence(s) to be printed should be enclosed within quotes. Look at the program given below.

```
10 REM PRINTING WORDS, NUMBERS AND SENTENCES
20 PRINT "HELLO"
30 PRINT "123"
40 PRINT "PRINTING STRING CONSTANTS"
50 END
```

```
RUN
HELLO
123
PRINTING STRING CONSTANTS
```

Therefore whatever is written within the quotes is displayed on the screen (Note : The quotation marks are not displayed).

Now clear the screen with the CLS command. It clears the screen and places the cursor at the top left corner of the screen.

Compare the two programs as shown and understand the use of quotation marks.

10 REM PRINTING A NAME	10 REM PRINTING A NAME
20 PRINT TINTIN	20 PRINT "TINTIN"
30 END	30 END
RUN	RUN
0	TINTIN
Ok	Ok
CLS	CLS

In the first program the output is zero because the expression TINTIN is not enclosed within quotes.

The PRINT statement displays data on the screen (monitor); but if you want to have a printout of your data on a paper also known as Hard Copy you have to replace the PRINT command with LPRINT.

```
10 REM PRINTING A MESSAGE
20 PRINT "WELCOME TO THE CYBER SPACE"
30 END
```

```
RUN
WELCOME TO THE CYBER SPACE
Ok
CLS
```

If you want print the line " WELCOME TO THE CYBER SPACE" on the paper using printer (Hard Copy) instead of displaying the line on the screen , you have to use the command **LPRINT** in place of the PRINT command.

4.7 LIST Command

After running this program if you type CLS then it will clear the screen. But if you want to see it again, the LIST command will display the whole program on the screen. Listing can be achieved by typing LIST and pressing the enter Key.

```
LIST
```

```
10 REM PRINTING A MESSAGE
20 PRINT "WELCOME TO THE CYBER SPACE"
```

Listing a program is also useful for making corrections. The computer will print out the program in correct line number sequence and with all corrections and deletions made. You can write a letter by using the PRINT command as follows :

```
10 REM WRITING A LETTER
20 PRINT "My dear Mom, How are you? I am fine. I shall go home during summer
vacation."
30 PRINT "Hope you are well."
40 PRINT "With love"
50 PRINT "          "
60 PRINT "John"
70 END
```

Remember that the computer prints blank spaces also if they are inside the quotation marks i.e. "   ". Line No. 50 will print a blank spaces.

4.8 NEW Command

Each time you write a new program type NEW command, so that the memory space is cleared and ready to store a new program.

Before going to the next program we should clear the previous one from the computers memory. But how to clear a program? The NEW command clears the memory of the computer. Remember this command should be given before starting a fresh program. Otherwise a new program jumbles with the previous program.

Do it yourself

1. Write a BASIC program, which will print four lines consisting of your name, class, roll number and address.
2. Write a BASIC program, which will print 10 lines about your favourite poem.
3. Write a BASIC program to display words, numbers, sentences and message.

PRINT Statement with numbers

There are two ways to print a number.

```
10   REM PRINT A NUMBER
20   PRINT "7"
30   PRINT 7
40   PRINT -7
50   END
RUN
     7
     7
    -7
```

In line 20 the number is enclosed within quotes, therefore it is a string constant. In line number 30 the number 7 is a numeric constant, as it is not enclosed within quotes. In both cases the number 7 is being printed on the screen. Note, that in case of numeric constants a space is left before the number for the sign. In line 30 the + sign is invisible where as in line 40 the sign is present. For the positive numbers the computer automatically leaves one space before the number.

PRINT statement with calculation

Your computer can also act as a calculator with the help of the PRINT command. Let us see the arithmetic operators, in BASIC.

Arithmetic Operator	Normal arithmetic Symbols	Basic Symbols
Addition	+	+
Subtraction	–	–
Multiplication	X	*
Division	÷	/
Parenthesis	[],()	()

The Basic symbols for multiplication and division are the asterisk (*) and slash (/) symbols respectively on your keyboard.

```
10 REM PRINTING EXPRESSIONS AND CALCULATIONS
20 PRINT 20+5
30 PRINT "20+5"
40 PRINT 20-5
50 PRINT "20-5"
60 PRINT 20*5
70 PRINT "20*5"
80 PRINT 20/5
90 PRINT "20/5"
100 END

RUN
25
20+5
15
20-5
100
20*5
4
20/5
Ok
```

In the given program, you will find that there are two types of output (i)the result of the respective calculations (ii) whatever was written between the quotes is being displayed as it is.

4.9 Order of Calculations

In a BASIC program the order of calculations is as follows
(i) Parentheses()
(ii) Division(/)
(iii) Multiplication(*)
(iv) Addition(+)
(v) Subtraction(−)

Note: Only the first brackets ( ) are used in BASIC calculations.
Example:

```
10  REM PRINTING CALCULATION
20  PRINT (2+3)*(6/2)-3+6
30  PRINT 2+3*6/2-3+6
40  PRINT 2+3*6/2-(3+6)
50  END
```

RUN
18
14
2

Do it yourself

1. Give the output of the following programs:

(i)
```
10 REM PRINTING CALCULATIONS
20 PRINT (10/2)*3+5
30 PRINT 10/2*(3+5)
40 PRINT 10/2*3+5
50 END
```

2. Write a program to print the sum, product and the difference of two numbers.

4.10 Creating designs with PRINT statement

You can draw designs with the help of the PRINT statement.

```
10 REM PRINTING PATTERNS
20 PRINT "############"
30 PRINT "##########"
40 PRINT "########"
50 PRINT "######"
60 PRINT "####"
70 END
```

When you RUN this program the design will look like this:

```
############
##########
########
######
####
```

4.11 Learning AUTO command

You must have noticed that whenever you write a BASIC program, you have to type the line numbers without fail. But there is a command (AUTO) by which line numbers will be generated automatically.

```
AUTO
10 REM USING AUTO COMMAND
20 PRINT "PRINTER IS AN OUTPUT DEVICE"
30 END
[Ctrl]+[C]
```

When you press Enter key at the end of AUTO, line 10 will be generated automatically.
The syntax of AUTO is AUTO X, Y
Where X is the first line number and Y is the interval between subsequent line numbers.
Normally the AUTO command is stored in the computer as
AUTO 10,10.

AUTO 10,5 will imply that the line numbers will start from 10 and the subsequent line numbers will be generated at intervals of 5 like 10,15,20,25...etc.

Note: When a program is running on the computer, it can be stopped at any time by using the control key (Ctrl) and the alphabet key C simultaneously.
[Ctrl]+[C]

4.12 Using COMMA with PRINT statement

You have already learnt simple PRINT statements. You will now learn how with the use of Comma and Semicolon in PRINT statements we can manipulate the display on the screen of various data items.Comma is used to position the display control at the beginning of the next zone. Semicolon positions it to the immediate next column, so that the next field is displayed without leaving any spaces.

When COMMA is used in a PRINT statement, the data items are spaced out at the time of display. When the COMMA is used with the PRINT statement the screen divides itself in 5 areas or zones which are called print zones. of 16 columns each. (The BASIC computer screen can be divided into 80 columns and 25 rows). Let us see an example:

```
10 REM TO PRINTING VALUES NEATLY USING COMMA
20 PRINT 1, 20, 333,4454, ,5 -50
30 PRINT "A","SUB","MOUSE","D","E"
30 END
```

```
RUN
1              20           333        4454        -50
A              SUB          MOUSE      D           E
```

The computer takes the value and prints in separate zones

Notice that the COMMA simply tells the computer to move to the next print zone. That is why when a PRINT statement contains two or more items (here numbers) separated by commas, the computer automatically prints them in adjacent zones. You will notice that while printing numeric values the computer leaves a space on the left for signs (positive or negative).

Comma at the end of the last item

```
10   PRINT 2,3,4,
20   PRINT 3
30   PRINT "A","B","C",
40   PRINT "D"
50   END
```

RUN

2	3	4	3
A	B	C	D

10 PRINT 2,3,4
20 PRINT 3
30 PRINT A,B,C
40 PRINT D
50 END

2	3	4
3		
A	B	C
D		

Notice in case of the first example when the COMMA is used, the computer prints the number 3 on the same line but in the next zone. The same way 'D' is printed on the same line as the other alphabet but in the next zone.

In the second example where there is no COMMA after 4 or C in line 10 and 30, the computer prints the number 3 and alphabet D on the subsequent lines.

In case of more than five items:

10   PRINT 0,1,2,3,4,5,6,7,8,9,10
20   END
RUN

0	1	2	3	4
5	6	7	8	9
10				

Remember you can print up to five numbers on a line using commas. If more than five variables appear in a statement separated by commas the sixth variable will get printed in the first zone on the next line.

Do it yourself

1. Write the output by drawing zones.
   a)   10 PRINT 1,2,3
   b)   10 PRINT "B", "A", "S", "T", "C"
   c)   10 PRINT 2,-3,4,7
   d)   10 PRINT 3,5,6,
        20 PRINT 8

4.13 Using SEMICOLON with PRINT statement

When you use SEMICOLON with the PRINT statement numbers are printed out next to each other. There is only one gap in between them.

```
10 PRINT 1; 2; 3; 4
20 END
RUN
1 2 3 4
```

In case of numeric data, numbers are printed close together one after the other but with spaces in between for signs (+ and –).

```
10 PRINT "INDIA"; "IS"; "MY"; "COUNTRY"
20 END
RUN
INDIAISMYCOUNTRY
```

See the computer prints all the string values together without leaving any space. A blank space should be inserted after each data item. So that you can get minimum space required between words.

So for a clear output type the same program as

```
10 PRINT "INDIA"; " "; "IS"; " "; "MY"; " "; "COUNTRY"
```
                            OR
```
10 PRINT "INDIA "; "IS "; "MY "; "COUNTRY"
20 END
RUN
INDIA IS MY COUNTRY
```

Notice if you insert a space in between words or figures (as shown above) the output or result will be designed in a very neat manner.

Commas and Semicolons in PRINT statement

You can use both commas and semicolon together in a PRINT statement.

```
10 PRINT 1, 2;3, 4;5, 6;7
20 END
RUN
1      2 3      4 5      6 7
```

Whenever a comma is present, the output appears in the next zone.

1. Give the output of the following statements.
    i)   10 PRINT 1,2,3,4,5
    ii)   10 PRINT HELLO,6
    iii)   10 PRINT A, B; C, D; E
    iv)   10 PRINT 11;22;33;44;55
    v)   10 PRINT "MANGO"; "PINEAPPLE"; "JACKFRUIT"

4.14 Special use of PRINT statement

The PRINT statement can also be used to insert a blank line(s) for a better-looking output.

    10   PRINT "THIS PROGRAM PRODUCES THREE BLANK LINES"
    20   PRINT
    30   PRINT
    40   PRINT
    50   PRINT "ISN'T IT FUNNY?"
    60   END

RUN
THIS PROGRAM PRODUCES THREE BLANK LINES

ISN'T IT FUNNY?

Notice in the above program there are three blank lines between two sentences. Thus if a PRINT statement is not followed by any constant ,variable or expression it prints a blank line.

Points to remember

☺   The PRINT statement prints words, figures, sentences and numbers.
☺   The computer can also do calculations by using PRINT statement.
☺   Designs can be drawn through the PRINT statement.
☺   It separates items by using commas and semicolons.
☺   It prints whatever is given within quotes after the PRINT statement.
☺   Blank lines can be inserted.

4.15 Editing your program

```
10  REM LEARNING TO MAKE CORRECTIONS
20  PRINT "CHARRLES BABBAGE IS KNOWN AS THE FATHER OF
    COMPTERS"
30  PRINT "I WANT TO DELETE LINE NUMBER 30"
40  PRINT "I WANT TO ADD ONE MORE LINE NUMBER."
50  END
```

In the above program line 20 has a spelling mistake that is one additional 'R' is present in the word CHARLES and 'U' is missing from the word COMPUTERS. How to make the change?

Note these steps carefully:

1. Take your cursor to line 20
2. Take your cursor to CHAR<u>R</u>LES (the underlined character)
3. Press the delete key and ensure CHARLES is spelt right.
4. Take your cursor to COMP<u>T</u>ERS. (the underlined character)
5. Press Insert key when a highlighted box appears.
6. Type U and ensure the word COMPUTERS is spelt right.

There is one more way by which you which you can do the modifications.

Type: edit 20 ⬅

Here line 20 along with the statement will be displayed on the screen.

```
20  PRINT "CHARRLES BABBAGE IS KNOWN AS THE FATHER OF
    COMPTERS"
```

So you can modify the words then and there on the screen. By listing the program you can see whether the necessary corrections have been made. After you have made the corrections, you have to come to the end of line number 20 and press the RETURN key to set it into the computer's memory.

To delete line number 30 you have to type

DELETE 30 ⬅

or

30 ⬅

Type LIST to check out whether the line has been deleted.

But when you want to add a line after 40,you can include this between 40 and 50 by giving line number 45. List out the program to check whether the line number has been inserted. Remember to press RETURN key after editing each line and see the listing each time after the necessary corrections are made so that your program is error free.

4.16 LET Statement

LET statement assigns a value to a variable. For example if we write M=12, it means that the value 12 has been stored in a memory location M.

```
10   LET X=20
20   PRINT X
30   END
```

The LET statement in the line 10 instructs the computer to store the value of 20 in the variable. When the statement is worked the result of X will be 20. The PRINT statement in line 20 prints out the value of X i.e. 20.

Now follow this program. LET also acts as a processing statement. Say we want to add up the marks of three subjects and print the sum.

```
10   REM ADDING MARKS
20   LET SUB1=65
30   LET SUB2=35
40   LET SUB3=20
50   LET TOT=SUB1+SUB2+SUB3
60   PRINT TOT
70   END
```

The statement TOT = SUB1 + SUB2 + SUB3 is a processing statement where the contents of SUB1,SUB2 and SUB3 are added and stored in the variable TOT.

Let us take another example.
```
10   LET M=10
20   LET N=6
30   PRINT M, N, M+N, M-N, M*N
40   END
```
RUN

| 10 | 6 | 16 | 4 | 60 |

You can join words or sentences by using PRINT command. This process is knows as **Concatenation**. Simply, we can say that concatenation is the joining of strings (characters, words or sentences)

Let us consider the following example.

```
10   LET A$= "PROGRAMMING"
20   LET B$= "IN"
30   LET C$= "BASIC"
40   PRINT A$+B$+C$
50   END
RUN
     PROGRAMMINGINBASIC
```

Notice that the lines have been joined together because we did not instruct the computer to give any spaces in between each of the strings by using semicolon(;) or comma (,). You try it and see the output, OK!

Do it yourself

1. Assign values 25 and 20 to numeric variables A and B. Print the sum and product of A and B.

2. Write a program to multiply 8 and 9 to obtain the product.

3. Write a program to divide 105 by a number to obtain the value of 5.

4. The cost of an item is Rs. 56. What wiil be the cost of 35 such items? Write a simple program.

5. RUN the following programs and record the output.
   (i)
```
   10 LET X=10
   20 LET X$= "BOOKS"
   30 LET Z=25
   40 LET Z$= "PENS"
   50 PRINT X; X$; Z; Z$
   60 END
```

6. Write a program to print the cube of the following numbers
   (i) X=4, (ii) X=20, (iii) X=25.

4.17 SOUND in BASIC

In BASIC programming you can create pleasant music through the help of programs. There is a built-in speaker in the computer and commands like SOUND, BEEP and PLAY can be used.

See the following:

```
10 PLAY ABCDEFG
20 PLAY A1B2C3D4D5F6G7          10 PLAY CDEFGAB>C
30 END                          20 END
RUN ◄──┘                        RUN ◄──┘
```

You can listen to different music created from the SOUND commands of the BASIC.SOUND command directs the computer's internal speaker to create sound based on frequency and duration.

4.18 GOTO Statement

As we have already learnt when we RUN a program the computer picks up one instruction at a time, executes it and then moves on to the next instruction. It continues in this fashion till it reaches the end of the program.

```
10 LET X$="ACES"
20 PRINT X$
```

Line No.10 assigns the value, ACES to X$ and Line no.20 simply prints it out. The program is executed just once. However there may be certain situations where you want the computer to execute certain instrctions over and over again.

Let us assume that you want the computer to execute the line 20 repeatedly i.e you want the computer to print the word "ACES" continuously. The best way to do this would be to set up a loop. A loop sends the program control back to a specified line so that the instruction is repeated. To set up such a loop we use the GOTO statement. Add the following instruction to the program.

```
30 GOTO 20
```

Line 30 sends the program control back to line 20. Now, how does the loop really work?

Once it has executed lines 10 and 20, program control shifts to line 30. Here it is asked to go back to line 20 which is a PRINT statement. The computer prints the name once more then moves on to line 30 where it is once again sent back to line 20. Thus,a loop has been set up.

```
      ┌─────────►┐
      │  LINE 20 │
      └──────────┘
         LINE 30
```
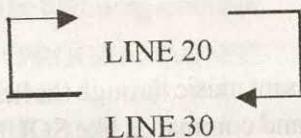
This is an infinite loop. The computer will go on printing the word continuously.
To stop the program execution press the Ctrl key, and while holding it down, press
the BREAK or SCROLL LOCK key.

The program will halt and the computer will display a message " Break in 20".

ACES
ACES
ACES
ACES
:
:
:
Break in 20

4.19 READ and DATA Statements

You have learnt to assign data to variables through LET statement. Another method of
assigning data is to use READ and DATA statements, which can be particularly useful
when large amounts of data are involved.

Syntax :   READ variable(s)
                        .....
                        .....
                     DATA data [,data]

When READ-DATA statement is used, we supply the data along with the program. It
helps us to edit the data and the program simultaneously. The variables in the READ
statement and the values in the DATA statement are separated by commas. Let us
assign "SHAKTI" and 12 to the string variable NAM$ and numeric variable AGE
respectively.

                10 READ NAM$, AGE
                20 DATA "SHAKTI", 12
                30 PRINT NAM$, AGE
                40 END
Output on the screen : SHAKTI   12

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When the control faces READ statement, it jumps to the DATA statement, from which it reads the data, for the variables used in READ statement. If required amount of data, is not available in the DATA statement then an error message "OUT OF DATA" will be displayed. If appropriate type of data is not given with DATA statement then the error message "DATA TYPE MISMATCH" will be displayed. For example a string variable has to be supplied with string constant data and a numeric variable has to be supplied with numeric constant data. Let us see the following example.

```
10 READ NAM$, AGE
20 DATA "SHAKTI"
```

Output on the screen : OUT OF DATA

Here no data is provided for the variable AGE.

```
10 READ NAM$
20 DATA 12
```

Output on the screen : DATATYPE MISMATCH

Here NAM$ is a string variable and the data in DATA statement is a numeric value. We can write the data in separate lines also. The above example can be written as follows.

```
10 READ NAM$, AGE
20 DATA "SHAKTI"
30 DATA 12
40 PRINT NAM$, AGE
50 END
```

Some more examples on READ-DATA statement are given below :

(1)
```
10 READ N
20 PINT N/2
30 GOTO 10
40 DATA 6
50 DATA 18
60 DATA 7
70 END
```

(2)
```
10 READ P, Q, R, S
20 DATA 18, 20, 22, 45
30 PRINT P; Q; R; S
40 PRINT P, Q, R, S
50 END
```

Out on the screen :

	18	20	22	45
18		20		22	45

(3)
```
10 READ U,V
20 LET P= U*V
30 LET Q=U/V
40 PRINT P
50 PRINT Q
60 DATA 20,10
70 END
```

Output on the screen :　　　　　200
　　　　　　　　　　　　　　　2

(4)
```
10 DATA 5, 10, 15, 20
20 READ M, N, O, P
30 LET Q = M+N
40 LET R = N-M
50 LET S = Q+P
60 LET T = P-Q
70 PRINT "M+N=";Q
80 PRINT "N-M=";R
90 PRINT "Q+P=";S
100 PRINT "P-Q=";T
110 END
```

Output on the screen :
```
M+N = 15
N-M = 5
Q+P = 35
P-Q = 5
```

Points to remember:

☺　The READ statement must always have one or more DATA statements that provide the correct number and type of data.

☺　All the Data in a DATA statement should be separated by commas.

☺ If the data itself contains comma, the whole data should be enclosed in quotation marks.

☺ if the number of data elements in a DATA stetement exceeds the number required by a READ statement, the data in excess is ignored if there are no more READ statements. Otherwise, the next READ statement uses it.

☺ If the number of data elements is less than the required number then an 'Out of Data' error message is displayed and the program is halted.

☺ One READ statement may access many DATA statements.

☺ The data in a DATA statement should consist of only numbers and strings. Variables and expressions are not allowed.

4.20 How to come out from BASIC

By typing the command "SYSTEM" you can come out from BASIC.

REM TO COME OUT FROM BASIC
PRINT "THIS IS MY LAST PROGRAM"
PRINT "BYE-BYE"
END
Ok
SYSTEM

C:\> (in case of Hard Disk)

A:\>(in case of Floppy Disk)

After running the above program when you type SYSTEM, C:\> or A:\> prompt will appear on the screen, which means you have come out from BASIC.

Chapter 5
Windows Operating System

We will learn about

☺ **What is an Operating System?**
☺ **Features of the Windows Operating System**
☺ **What is a file?**
☺ **Creating Folders**
☺ **Finding files or folders**
☺ **File operations from Windows Explorer**
☺ **Closing Windows**

5.1 What is an Operating System?

You know that to drive a car, one has to learn driving. What is to be noted that a car cannot drive itself, nor can a cycle ride by its own.

You have all used a computer. But, have you wondered how the computer understands your instructions? The computer only understands one language, that is the Binary Language or the stream of 1's and 0's. Then how does the computer understand our English like commands? Does the computer have any intelligence? Yes, the intelligence of the computer is in its Operating System. The operating system is a set of programs that tells the computer how to work.

When you first start the computer, the operating system loads itself into the memory of the computer so that it can control all operations of the computer. This process of loading the operating system is called "**booting**".

The main functions of the operating system can be summarised as follows :

i. Controlling the various input devices like the keyboard, mouse etc. and output units like monitor, printer etc.

ii. Managing the memory for various tasks like storing data from files, inputting from the keyboard and writing data back to files. It also manages the data from primary memory and secondary memory.

iii. Executing programs given by the user. (You must have noticed that after you type in the primitivesof LOGO the computer executes the program and displays the output on the monitor. This entire job is done with the help of the operating system.)

iv. Creating files and storing them. The operating system manages the files and data. It keeps a track of where and how the data needs to be stored in the primary or secondary storage media.

Though there are many types of operating systems available, the basic functions of it remains the same. . One of the most popular operating system for the Personal Computer is Windows developed by Microsoft Corporation, USA. Previously all personal computers used another operating system DOS(**D**isk **O**perating **S**ystem), also developed by Microsoft. In this class we shall learn how to use the Windows Operating System.

5.2 Features of the Windows Operating System

The ease of use has made Windows a very popular operating system. Its has a Graphical User Interface (GUI) which makes it easy for the user to use the system without having to memorise difficult system commands. Let us understand this with help of a story.

Once a little boy had a fruit given by his uncle, when his uncle had come to visit his house. The boy had liked the sweet ,orange coloured fruit that his uncle had brought. He liked it very much, but he forgot to ask the name of the fruit. Some days later, the little boy went to the market with his mother. He asked his mother to buy the fruit. His mother asked him the name. He couldn't tell her the name. She asked if it was grapes, apples, banana or melon. He could not tell her. Then suddenly, he saw a shop selling the fruit and pointed at them. His mother then went to the shop and bought him the same fruit which was actually an orange.

My Computer   Logo.exe   PowerPoint

My Documents   Winword   Briefcase   →ICONS

Recycle Bin   Explorer   Excel

Internet Explorer

Start   1:04 PM
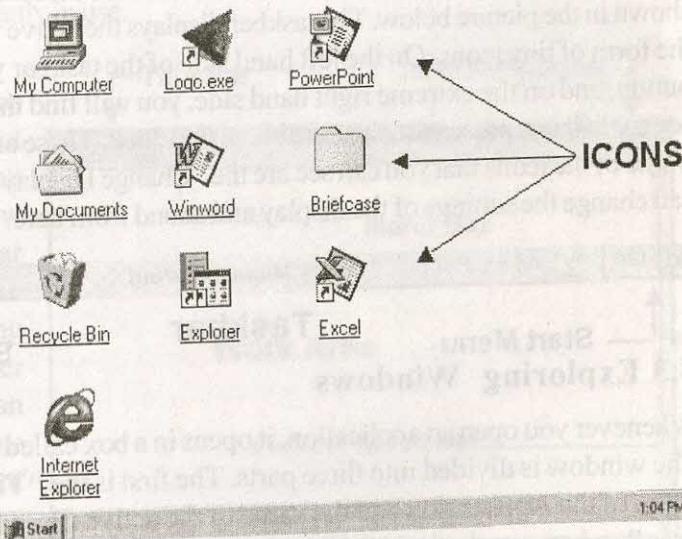
So,now we understand that in order to work on DOS, you have to remember the commands, like the name of the fruit. But, in case of Windows, you do not need to remember any commands, but only recognize the graphical representation of the commands from the screen, in order to use them.

To make the computer easy to use, different types of operating systems have been developed over the years. Windows is one such operating system, which takes away

the burden of remembering how to use the computer. When we first start the computer with Windows as the operating system, we get a screen that contains some pictures. This is called the "**Desktop**".

At the extreme left bottom corner, we have a button called "**Start**". All the programs and software installed in our computer can be accessed from the **Start** menu or **Start** button.

The Desktop is like our table top. Just the way we keep our books, geometry box, ruler, pencil box neatly on our table; we find a whole lot of small pictures neatly arranged on our computer screen or desktop for easy access in the form of "**icons**". An icon is a pictorial representation of a program or folder. Some of the most important icons on the desktop are "My Computer", "Network Neighbourhood", "Recycle Bin" etc. Clicking (pointing the mouse pointer and pressing the left button once) will select the particular icon.

To open a particular program or folder we need to double-click (Clicking twice within a short interval) on an icon.

You will find that, there is a bar at the bottom of the screen, called the "**Taskbar**" as shown in the picture below. The taskbar displays the active window application(s) in the form of tiny icons. On the left hand side of the taskbar you will find the "**Start**" button, and on the extreme right hand side, you will find the "**Clock**". You can also see some icons present on the left side of the clock. These are called "Systray" icons. Some of the icons that you can see are the "Change Display" and "Sound" icons. We can change the settings of the display and sound from here.

Start Menu   **Taskbar**   **System Tray**
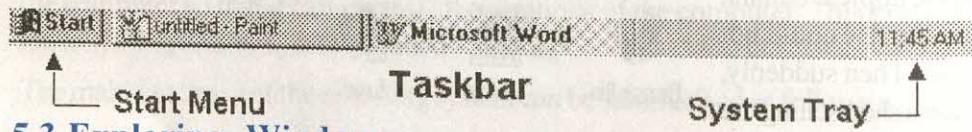
5.3 Exploring Windows

Whenever you open an application, it opens in a box called the application window. The window is divided into three parts. The first is the **"Title bar"** which tells the name of the Application and the name of the active file. The second is the **"Work area"**, where we do the actual work like type in text and the third is the **"Status line"** present at the bottom of the window screen. Let us see the **Notepad** program. Click on **Start | Programs | Accesories| Notepad**. You will find the notepad application window appears on the screen.

We see the name of the application which is currently active on the title bar. When we start the Notepad application the initial name of the file is displayed as "Untitled" on

the Title bar. You can also change the name of the file as per your wish while saving. We will find the minimize, maximize and close buttons respectively on the right side of the titlebar. These buttons are collectively known as control buttons.

Minimise Button: Clicking on the minimise button makes any active window application disappear from the normal view (enlarged) and is found on the taskbar as a tiny button. If you want to goback to the application, click on the tiny button which remains displayed on the Task bar.

Maximise Button: Clicking on the maximize button, which looks like a small square fills the desktop with the contents of the application .

Restore Button: This button resembles two overlaying windows. Clicking on this button restores the application screen to the size it was before it was maximized. (When any window is in its maximized form we find the Restore Button in the place of Maximise button).

Close Button: If you click on the close button , it will close the windows application currently in use.

A menu is a list of options that allow us to carry out various operations. The menu bar is located below the titlebar. The menubar contains menu items like "File", "Edit" etc. Clicking on them will show another menu from where we can select some operations like opening of files, closing of files etc.
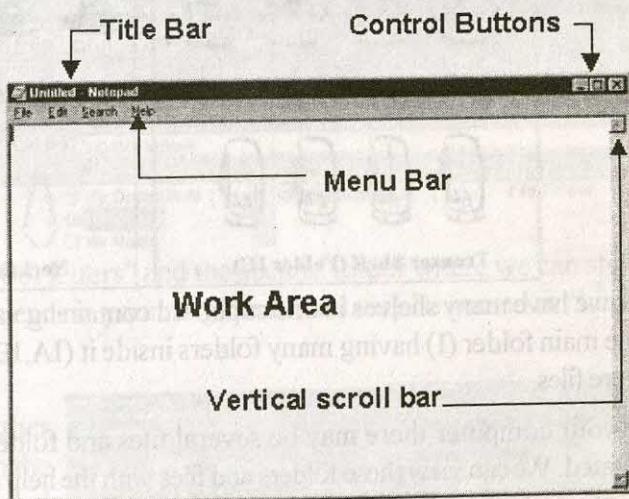
5.4 What is a file?

Suppose you have three friends and you want to send invitation letters to them for a picnic at your house on Sunday. When you write a letter you use a pad and a pen to write the same. You write three different letters to three friends and send it to them. Thus, each of these letters contains some information. In the same way, while using the computer, you can type the information and store it in a file. Thus, we can say, a

location where information can be stored permanently (like a disk) is called a file. To get back the file for later use, we need to name the files. Let us say we name the files as "letter1", "letter2" and "letter3" respectively. Now, we will store similar types of files in the same place where we can find it later. A location, where similar types of files are stored is called a folder.

First of all, let us understand what is a folder? A **Folder** can be thought of as a cupboard. There may be many shelves in a cupboard. We keep different types of clothes in different shelves. Now, in each shelf of the cupboard, we keep only similar type of things or files. For eg. we have different shelves for shirts, hats, trousers and ties. We generally do not mix shirts with trousers. A folder is a storage of a collection of files. We can again compare files with the contents of a shelf. Here the shirts in the shelf may be compared to a set of files, again each of the shirts can be compared to one single file. That means the cupboard may be viewed as the main folder which can hold different shelves which can be viewed as folders inside the main folder. The contents of the shelves i.e. shirts, trousers may be viewed as the various files.

Wardrobe (Folder I)

| Shirt Shelf (Folder IA) | Hat Shelf (Folder IB) |
| Trouser Shelf (Folder IC) | Necktie Shelf (Folder ID) |

As we have many shelves in one cupboard containing various materials, we can have one main folder (I) having many folders inside it (IA, IB, IC, ID), each having one or more files.

In your computer there may be several files and folders which have been already created. We can view these folders and files with the help of a program called Windows Explorer. How do we access Windows Explorer?

☺ Click on **Start | Program**. You will find list of programs on the right side. Click on **Windows Explorer**.

The Windows Explorer is divided into panes. The left pane (side) contains a list of folders that are present in our secondary storage device. On the right pane (side) we can see the contents of the "selected" folder located on the left side.

The contents of the folder can again be folder(s) or file(s) or a combination of both.

Thus a folder may contain more folders or files or a combination of folders and files. Folders are just like paper folders where we can store our work. They are used to organize documents, programs, and other items. We can open a folder to see its conents, close the folder, and shift the contents from one folder to another. For example, you can have folders to store programs, letters, documents and other files.
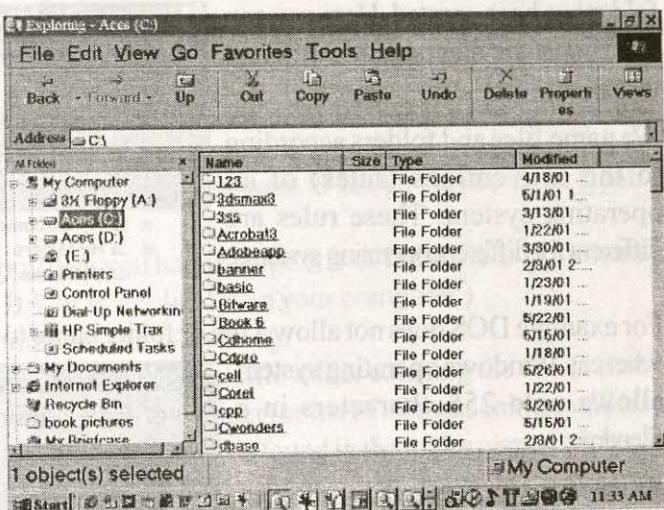
5.5 Creating Folders

Let us create a main folder called "My letters". Now, let us create two more folders under the main folder. One folder where we can store letters written to our school friends may be named "School letters" and the second folder where we can store letters to be written to your friends in your neighbourhood may be named as "home letters".
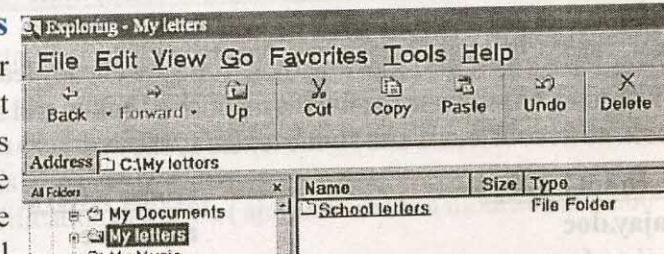
To create a folder, you can either select a particular folder from the Windows Explorer left pane, and right click on the right pane to get the context menu. Click on "New" then choose "Folder".
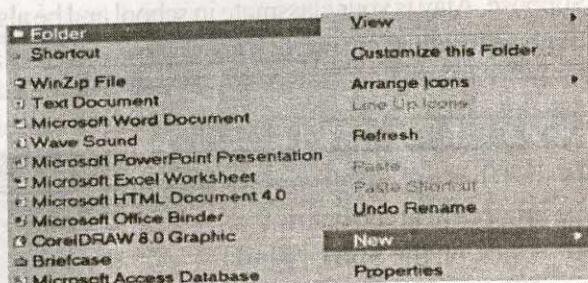
A default name of "New Folder" is displayed.

You can then type in a new name of your choice to the folder. You can now see that the

folder has been created. Here you can see a list of the files and their different locations.

We name files and folders according to the conventions (rules) of an operating system. These rules are different for different operating systems.

For example DOS does not allow a file or folder name to be bigger than 8 characters, whereas Windows operating system allows upto 255 characters in a filename.

Whenever, you name a file or folder, give it such a name that is easy to remember and tells what kind of files are stored under it.
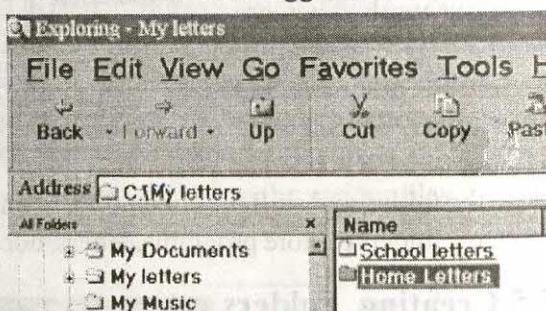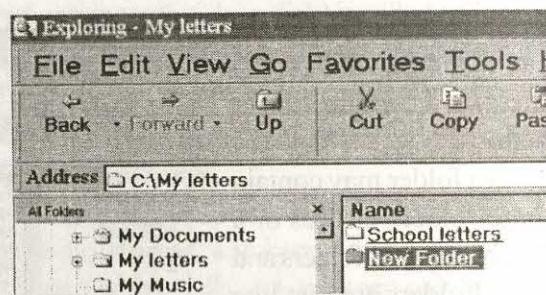
Now let us create the following files. You have already learnt how to create files using Wordpad. Now create the files as mentioned below and store them in the respective folders School letters and Home letters as shown.

School Letters	Home letters
ajay.doc	robin.doc
vijay.doc	rohit.doc
rashi.doc	gurmeet.doc
jill.doc	sonia.doc

Suppose, Ajay is your classmate in school and he also lives in the same neighbourhood. It is possible that you might forget where you have stored his letter named "ajay.doc". In such cases, the option of "Find Files" comes to use.

5.6 Finding files or folders

To find files or folders you have to follow the procedure given below :

☺ Click on the **Start** | **Find** | **Files or Folders**.
You will find the **Find: All Files** box on the screen.
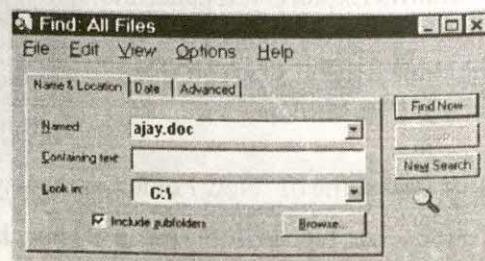
☺ Let us find the file "ajay.doc".

☺ Enter the name of the file in **Named** box.

☺ If you don't remember the name of the file , you may be able to find it by typing some of its contents in the **Containing text** box.

☺ Type in the name of the drive(**C:**) where you want to search the file in the **Look in** box.

(In case your file is in the floppy disk you have to type **A:** or if the file is in the hard disk you have to type **C:\ or D:** or as applicable in your computer.)

☺ Click on the **Find Now** button to start searching.

After the search is complete you will find the specific folder containg the file.In case the file to be searched, exists in more than one folder the list of all those folders will be displayed. In the given example the file "ajay.doc" is found in the folder named "School letters" which is under "My letters".

| ajay.doc | C:\My Letters\School Letters | 11KB Microsoft Word Doc. 03/12/01 12.00 AM |
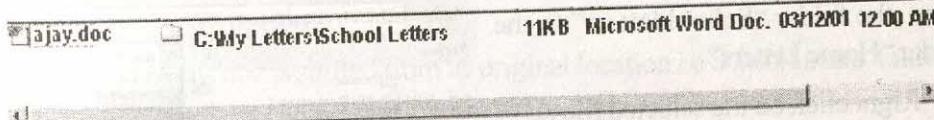
We can also know about the status of a file with the help of **Find** utility. (See the above figure)

i. Size of the file (In the given example size of the file "ajay.doc" is 11Kilobytes (KB)

ii. Type of the file (ajay.doc is a document file.)

iii. Date and time of last modification of the file (ajay.doc was last modified at 12.00 AM on 03/12/ 01)

In case you find that the file is not found i.e. the name of a folder is not displayed, it means that the file does not exist (you have not created such a file) or it has been deleted (removed) from the disk.

5.7 File operations from Windows Explorer

The Explorer application window can be divided into three section. The top window contains the menu and toolbars. The left side contains the name of the folders and the right side contains the list of files and folders present under the selected folder on the left side. Some of the operations that we can perform from Explorer are:

i. Copy files and folders

ii. Delete files and folders

iii. Rename files and folders

iv. Move files and folders

v. Recovering Deleted files and folders

Copying Files or Folders

Why do we need to copy files? Let us take an example; your friend may be having a particular game on car racing stored in a file named "Carrace.exe". Unfortunately you might not be having the same game.In this case you have to get the file by copying the file from your friend's floppy disk and copying it into your Hard disk. Thus you also get an opportunity to play the game in your own computer; In big offices there are vast documents which are typed out and stored in files. It is always safe to keep a copy of these files so that if by any chance the original file is destroyed these backup files comes to rescue. You can also copy files so that you can modify the files without changing the original docuument.

Steps for Copying a File

☺ Select the file that you want to copy. say, you want to copy the file "rashi.doc" from the folder "School letters" to the folder "Home Letters".

☺ Right click on the selected file .

The context menu will apeear.

☺ Select **C**opy from the menu.

☺ Select the folder (Home Letters) where you want to copy the selected file. Then right click on the selected folder.

☺ Choose **P**aste to copy the file.
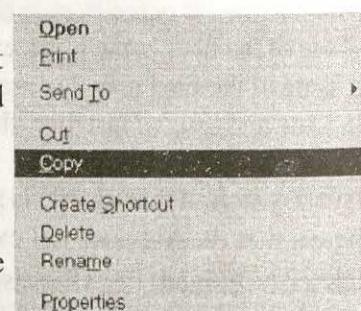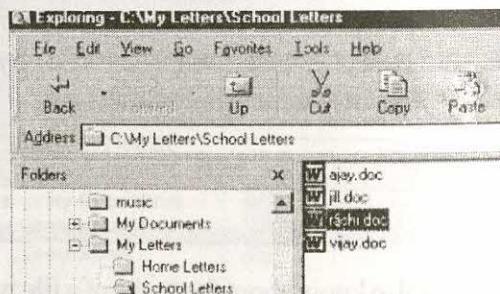
Alternative method of copying the file(s) with the help of keyboard :

☺ Select the file. |Press the **Ctrl+C** keys together to copy the file or folder. | Select the folder where you want the file to be copied | Press **Ctrl+V** keys to copy the file to the desired location.

You can also use the toolbar to do the above. Select the file and click on the "**Copy**" icon. Next select the folder where the selected file is to be copied. Then click on the "**Paste**" icon.

Note : During the copy operation, a file is duplicated i.e. the file or folder exists in two different locations.

Computer Horizons Book- VI   66
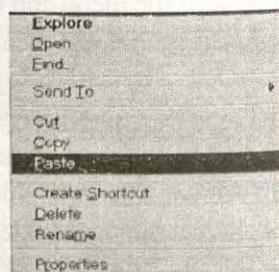
Moving a file

Just the way, we have an option to copy a file from one folder to another folder we can also move a file from one folder to another. While in case of "Copying", the original and the copied file exists in two different folders, but in case of "moving" the file is removed from the previous folder and placed to the desired folder.

Steps for moving a file

☺ Select the file (vijay.doc) from it original location. (from School Letters which is Stored in My Letters folder)

☺ Right click on the selected (vijay.doc) file. The context menu will appear.

☺ Click on **Cut** option.

☺ Select the desired location "Home Letters" (You will remember that the folder "Home Letters" is also stored in "My Letters" folder) in and right click to get the context menu

☺ Click on **Paste** option.

You will find Vijay. doc is shifted from its original location i.e School Letters folder to the desired location i.e.Home Letters folder.

Renaming files or folders

Suppose you have a letter written to your Principal stored in a file called "Pricipal_Letter.doc". Now, you may want to send the same letter to your headmistress and give a new name to the existing file as "Headmistress_Letter.doc"

[Note that after renaming, the contents of a file does not change, only the name of the file is changed.]

Open
Print
Send To
Cut
Copy
Create Shortcut
Delete
Rename
Properties
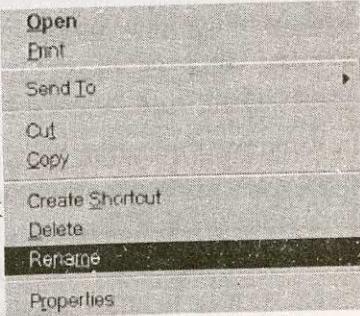
Steps for renaming a file

☺ Select the file (Principal_Letter.doc)| Rightclick on the mouse to get the context menu. The context menu will appear.

☺ Click on **Rename**.

You can also click on **File | Rename**.

☺Enter a new name for the file(Headmistess_Letter.doc | Press **Enter**. You will find your file(Principal_Letter.doc) is renamed with new name (Headmistress_Letter.doc)

ANITA.doc	25KB	Microsoft Word Document	3/16/01 12:53 AM
arun-del.doc	34KB	Microsoft Word Document	5/1/01 6:04 AM
asd.bmp	1,407KB	Bitmap Image	2/5/01 2:07 PM
Principal_Letter.doc	51KB	Microsoft Word Document	5/11/01 8:06 AM

Before renaming

ANITA.doc	25KB	Microsoft Word Document	3/16/01 12:53 AM
arun-del.doc	34KB	Microsoft Word Document	5/1/01 6:04 AM
asd.bmp	1,407KB	Bitmap Image	2/5/01 2:07 PM
Headmistress_Letter.doc	51KB	Microsoft Word Document	5/11/01 8:06 AM

After renaming

Alternative method for renaming a file

☺ Select the File | Press **F2** function key | Enter a new name for the file | Press **Enter**

Deleting Folder or File

While working on the computer for some time you may feel that certain files are no more useful or relevant and are unnecessarily taking up some space of your storage device; in such cases you can remove (delete) these files.

This is similar to the throwing away of useless papers in a waste paper basket. In your house you must have seen the waste paper basket where you keep your useless papers and try to keep your desk clean at regular intervals. There are again chances that you may need some of these papers at a later time which you feel unnecessary at this moment. Suppose, you have thrown an important paper in your waste paper basket by mistake, you can get that paper again on your desk very easily by taking it out from the waste paper basket.

In Windows Operating System we have a waste paper box known as "**Recycle Bin**" where we can keep our unwanted files.

Now let us see how to delete a file.

To delete the file "ajay.doc" from the "School letters" folder, we have to follow the method given below:

☺ Open **Windows Explorer**.

☺ Select the desired file to be deleted ("ajay.doc".)

☺ Right click on the selected file. The context menu will appear.

Open
Print
Send To
Cut
Copy
Create Shortcut
Delete
Rename
Properties
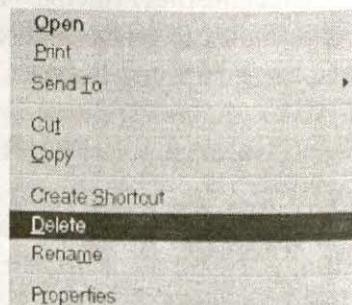
☺ Click on **Delete** option . You will find the **Confirm File Delete** dialog box.
☺ Click on **Yes** to delete (send the file to the Recycle Bin) or **No** to keep the file in the original location.
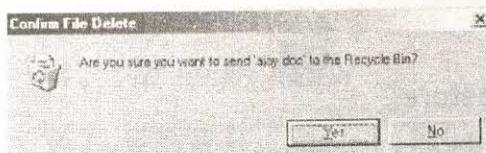
Alternatively you can delete a file with the help of keyboard.
☺ Select the file with the mouse and press the "**Delete**" key from the keyboard.

Thus you must have noticed that when we delete a file, intially it is not removed from the hard disk permanently, but is retained in the **Recycle Bin.**

So,we can get the files back, which are deleted by mistake from our computer. The process of getting back the files from the Recycle Bin is called **Restore.**

How will you restore a deleted file from Recycle Bin? Let us follow the steps given below.

Double click on **Recycle Bin** on your desktop.Recycle Bin will open.

You will find the list of the deleted files.

Select the '**deleted**' file to be restored.(In this case ajay.doc)

☺ Right click on the selected file. A drop down menu will open.

☺ Click on **Restore.**
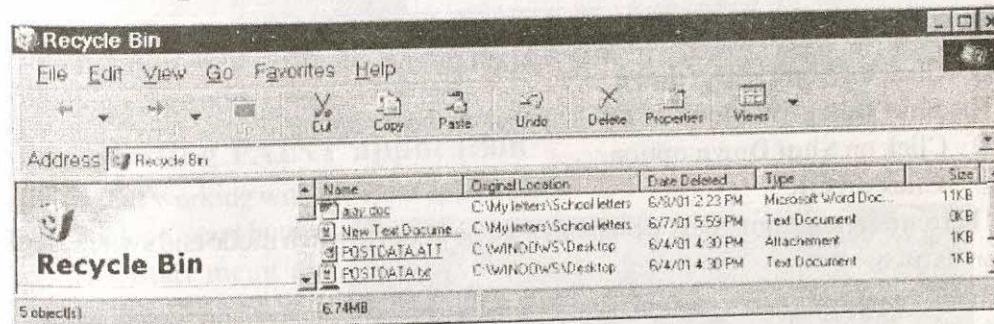
You will find file is restored in its original position.

But , if you want to delete the file from the hard disk parmanently, you have to click on **Delete** option. It is similar to emptying the waste paper basket.


Restore

Cut

Delete

Properties

You can easily understand the different status of Recycle Bin as shown in the picture below and hence the utility.

Recycle Bin
(full)

Delete /Restore

Recycle Bin
(empty)
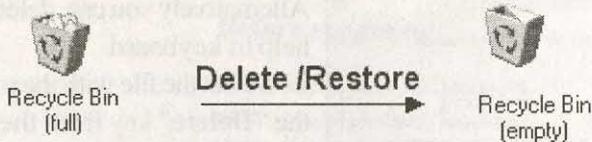
5.8 Closing Windows

Just as you close the cupboard after taking out the clothes, you need to close the computer after you have finished your work. Here closing down the computer actually has two operations. First you need to stop the Operating System that is Windows.

This is called shutting down.
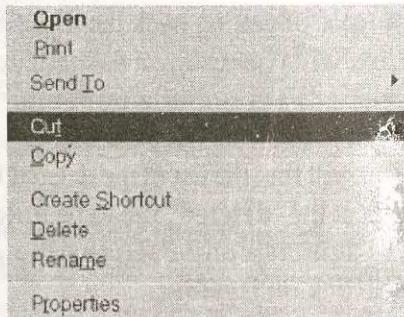
Steps for shutting down the computer :

☺ Click on **Start | Shut down**

The **Shut Down Windows** box will appear on the screen.

☺ Click on **Shut Down** option.

☺ Click on **OK**

There are certain computers which has auto power off switch mode and switches off on its own.

But in some computers you will find two messages are displayed on screen within a few seconds.

"Please wait while your computer shut down"

"It's now safe to turn off your computer"

Note : Leaving the computer powered ON for a long time can cause damage to its parts.
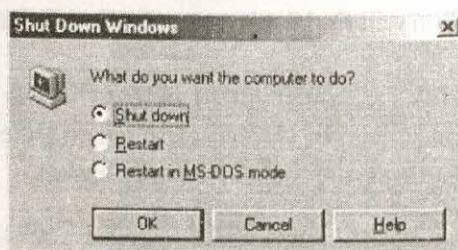
Chapter : 6
PAINT: Drawing Application In Windows

We will learn about

☺ **Starting Paint Application**
☺ **Getting familiar with the Paint Tools**
☺ **Understanding menus in Paint**
☺ **Drawing a Curve**
☺ **Drawing Polygons**
☺ **Selecting and Moving Pictures**
☺ **Flipping a Picture**
☺ **Stretching / Skewing a Picture**
☺ **Inserting Text on a Picture**
☺ **Copying and Pasting a Picture**
☺ **Zooming a Picture**
☺ **Saving a picture as a Wallpaper**

The **Paint** program is found within the **Accessories** menu available within the Windows operating system.

6 .1 Starting PAINT application

Let us start working with the Paint application.

☺ **Click** on **Start** button. The Start menu appears.

☺ **Highlight** on **Programs**. The Programs submenu will be displayed.

☺ **Highlight** on **Accessories**. The Accessories submenu opens.

☺ **Click** on **Paint**. The Paint application will open.
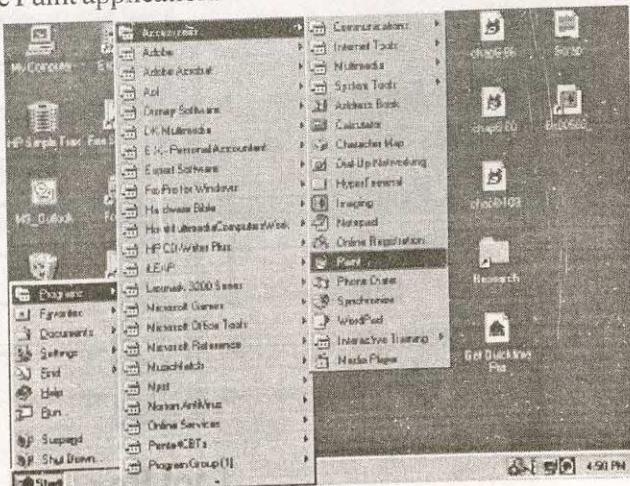
As soon as you open the **Paint** application you will find a screen where we can draw and paint pictures, write texts and do many other things which we will learn in our class.

Paint application window consists of the following elements:

**Title bar:** Title bar shows the name of the application i.e. Paint and name of the file on which we are working.

By default the name of the file is displayed as **Untitled**.

Menu bar : Menu bar has six options viz. **F**ile, **E**dit, **V**iew, **I**mage, **O**ptions, **H**elp.

Work area : This part of the window is used to draw pictures and insert Texts.

Tool box : **Tool Box** provides us many types of tools to create or edit picture or text.

Color box : We can choose colours from the Color box.
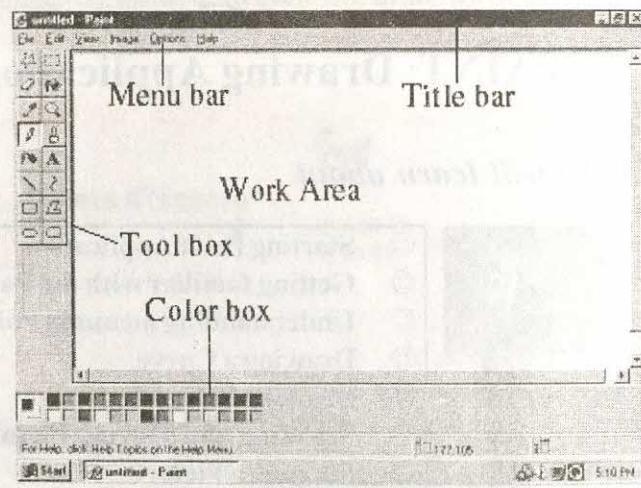
6.2 Getting familiar with the Paint tools

A feature called **Tool Box** appears on the left side of the paint screen. This **Tool Box** provides us with several tools to create or edit picture on text.

Free form select	Select
Erase/Color Eraser	Fill with color
Pick color	Magnifier
Pencil	Brush
Airbrush	Text
Line	Curve
Rectangle	Polygon
Ellipse	Rounded Rectangle
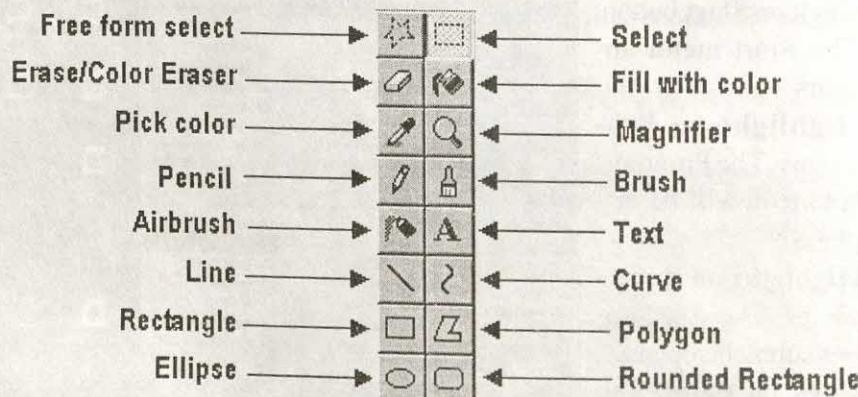
Tool Box

Let us discuss the functions of each of the tools found in the Tool Box.

Free-Form Select tool is used to select an irregular shaped area for performing various editing purpose.

Select tool is used to select a rectangular shaped area for performing various functions.

Fill With Color tool is used to fill in an enclosed area (having a boundary on all its sides) with any colour from the colour box.

Erase/Color Eraser tool is used to erase a part of a picture or replace a colour with another colour.

Pick color tool is used to copy colour from a part of picture to another part.

Magnifier tool is used to zoom in (enlarge the size) or zoom out (reduce the size) a picture.

Brush tool is used to draw and paint with the help of a brush available in various sizes and shapes.

Pencil tool is used draw pictures in free hand style of drawing.

Text tool is used to write text on the paint screen .

Airbrush tool is used to spray colour on the picture.

Line tool is used to draw pictures comprising of lines.

Curve tool is used to draw curve lines.

Rectangle tool is used to draw rectangles/ squares.

Polygon tool is used to draw different types of polygons.

Ellipse tool is used to draw ellipses/circles.

Rounded rectangle is used to draw rounded corner rectangle /rounded corner squares.

A tool is selected by clicking the mouse once on its designated button. When we click on a tool the icon seems to get sunken (depressed) and we thus know that it is activated.

Color Box

At the bottom of the window there is a **Color Box**. To select a colour for **foreground** we **click** on one of the colours in the **Color Box** and to select a colour for **background** we **right click** on one of the colours in the **Color Box**. Whenever we draw a picture with any of the tools, the colour of the picture will be the same as the foreground colour. Say we choose the foreground colour as red, whatever we draw with pencil, brush, airbrush etc. will be drawn in red.
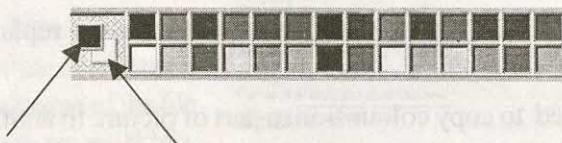
Foreground Colour   Background Colour

6.3 Understanding Menus in Paint

We have discussed earlier that menus in the paint application are shown in menu bar. Paint has six menus viz. **File, Edit, View, Image, Options, Help**. There are many commands available under each of these menus to perform various tasks.

File menu

We will find several options under the **File** menu viz. **New, Open, Save, Save As, Print Preview, Page Setup, Print, Exit** etc. To open the **File** menu we should click on the **File** menu or we can press <Alt> Key and F key simultaneously. Let us see various options available in **File** menu.

New option is used to open a new file.

Open option is used to open an existing file.

Save option is used to save a file.

**Save As** option is used to save the existing file with another name.

Print Preview option is used to see the preview of the file prior to the printing of the hard copy so that the user can make necessary modification if required.

Page Setup option is used to change the paper layout.

Print option is used to print the file.

Exit option is used to quit the paint application.
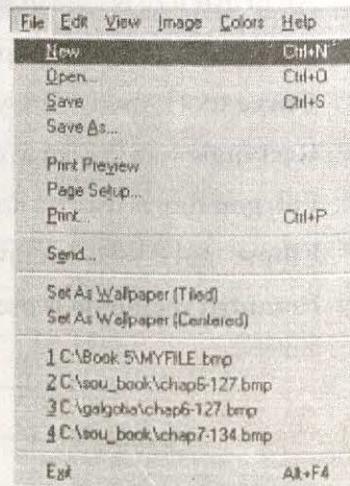
Edit menu

There are several options in **E**dit menu to edit our drawing. They are **U**ndo, **R**epeat, Cu**t**, **C**opy, **P**aste, C**l**ear Selection, Select **A**ll etc. We should click on **E**dit menu or press <Alt> Key and E simultaneously to open the **E**dit menu.

Edit	View	Image	Options
Undo			Ctrl+Z
Repeat			F4
Cut			Ctrl+X
Copy			Ctrl+C
Paste			Ctrl+V
Clear Selection			Del
Select All			Ctrl+L
Copy To...			
Paste From...			

Undo option is used to undo the last action.

To repeat the previously undone action we use the **R**epeat option.

Cu**t** option is used to cut the selected area of a drawing and put it on the clipboard.

Copy option is used to copy the selected part of a picture and put it on the clipboard.

Paste option is used to insert or paste the content of the clipboard to the desired location.

To delete the selected part a picture we click on **C**l**ear Selection**.

Select **A**ll option is used to select the entire picture.

View menu

View menu is used to change the view of a picture and to avail of the different utilities which can be displayed on the screen. There are many options in **V**iew menu also. They are **T**ool Box, **C**olor Box, **S**tatus Bar, **Z**oom, **V**iew Bitmap, T**e**xt Toolbar.

View	Image	Options
✔ Tool Box		Ctrl+T
✔ Color Box		Ctrl+A
✔ Status Bar		
Zoom		▶
View Bitmap		Ctrl+F
✔ Text Toolbar		

Tool Box option is used to show or hide the Tool box on the screen.

Color Box option is used to show or hide the Color box on the screen.

Status Bar option is used to show or hide the Status bar on the screen.

Zoom option is used to enlarge a picture.

View Bitmap option is used to view the entire picture on the screen.

T**e**xt Toolbar option is used to show or hide the Text Toolbar.

We have already learnt the various tools such as **Free form Select**, **Select**, **Pencil**, **Eraser**, **Fill with color**, **Brush**, **Line** tool in our previous classes.

In this class, we will discuss about the certain tools like curve, polygon in detail.

6.4 Drawing a curve

We can draw curves lines of various sizes and at different directions with the aid of **Curve** tool. Let us follow the steps below to draw a curve.

☺ **Click** on the **Curve** tool.

☺ Place the mouse pointer at the position from where we want to draw the curve, say A.

☺ **Click** and drag the mouse up to the position to where we want to end the curve, say B.

☺ **Release** the mouse button. The straight line AB will appear on the screen.

A ―――――――――――― B
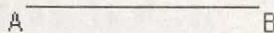
☺ Place the mouse pointer at a point say C. The straight line will change to a curve line as soon as we click on the mouse . You will notice that the curve line will pass through the all the three points A,B and C.
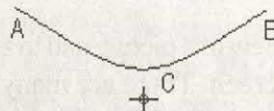
☺ To change the shape of the curve you can click the mouse pointer at another point say D. Say if you want to change the shape of the curve once again, it will not be possible. Since the curve tool allows the user two chances (mouse clicks) for creating the shape of a curve.
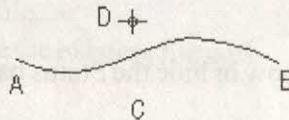
This as you understand is an open curve. We can also draw closed curves.

How to draw closed curves?

☺ After activating the curve tool, **click** on any point of your choice, say A.

☺ **Click** on another position, say B. You will notice that although you have not dragged the mouse for drawing a line, a straight line AB has been automatically generated.

A ———————— B   A ———————— B

1st mouse   2nd mouse
click   click
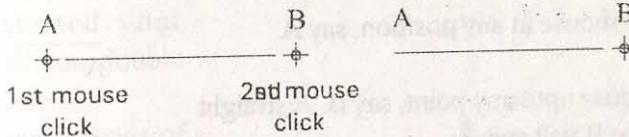
☺ Click on the third point say C, it will immediately create a **closed** curve as shown below.

————————————+

+
C

Third mouse click
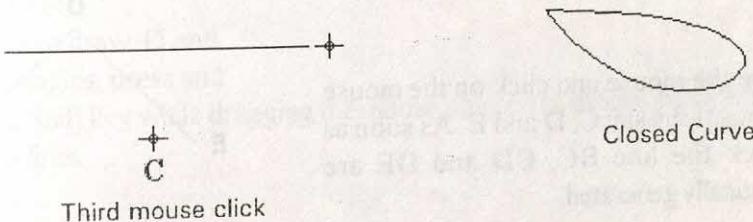
Closed Curve

Draw the given picture with the help of curve tool
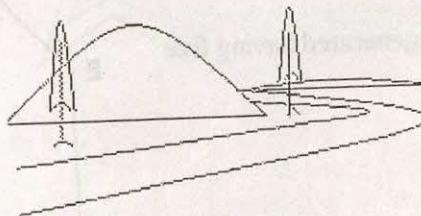
6.5 Drawing polygons

You must have read in geometry what a polygon is. The word "poly" means many and "gon" means sides. A polygon is a closed plane which has many sides. We can draw diffrent types of **polygons** with the help of the **polygon tool**. Let us try to draw a pentagon ABCDE with the help of polygon tool.

☺ **Click** on the **polygon** tool to activate it.

☺ **Click** on the mouse at any position, say A.

A   B
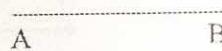
☺ **Drag** the mouse upto any point, say B. A straight line from A to B will appear.

☺ **Release** the mouse and **click** on the mouse at the positions say C. You will notice a straight line is **automatically** generated from B to C.

☺ **Release** the mouse and click on the mouse at the positions say C, D and E. As soon as we click the line BC, CD and DE are automatically generated.
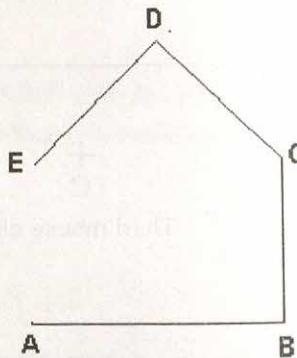
☺ Double click at the point E or single click at the starting point A to complete the polygon.

So, the Polygon ABCDE is generated having five sides.
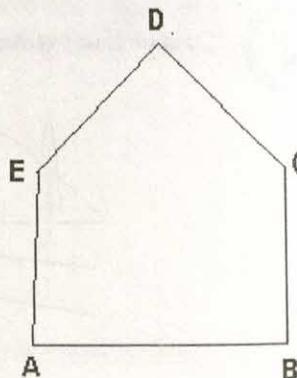
☺ Now, say we click on any position say , F, outside the polygon and want to draw a line AF but no line will be generated, since we have completed the polygon by returning to its starting point, in this case A.

You will notice that the lines will be continuously generated until you click on the point from where you started your polygon or until you double click on the mouse.

We can draw many types of polygon like pentagon (polygon with five sides), hexagon (polygon with six sides), septagon (polygon with seven sides) etc.

If you want to draw 45 and 90 degree angles, press and hold down Shift key while dragging the mouse pointer, to obtain straight and continuous lines.
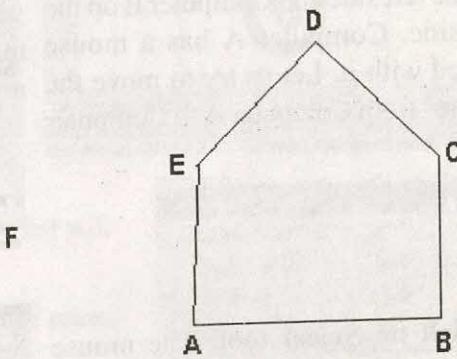
Draw the given picture with the help of polygon tool.
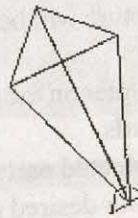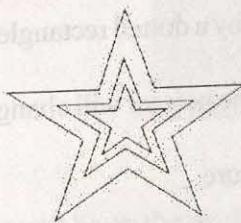
6.6 Selecting and moving pictures

We can move a picture or part of a picture to a new position on the screen. To move a picture or part of a picture, we should first select it. In the figure given below we find a picture of two computers; Computer A on the left side and Computer B on the right side. Computer A has a mouse attached with it. Let us try to move the 'mouse' from Computer A to Computer B.
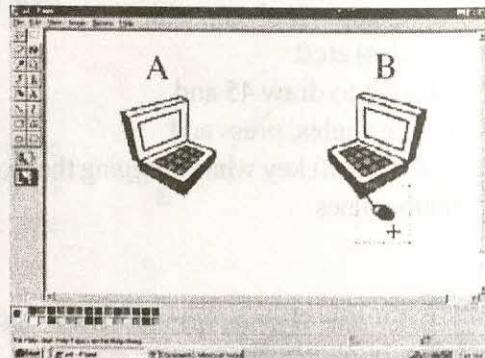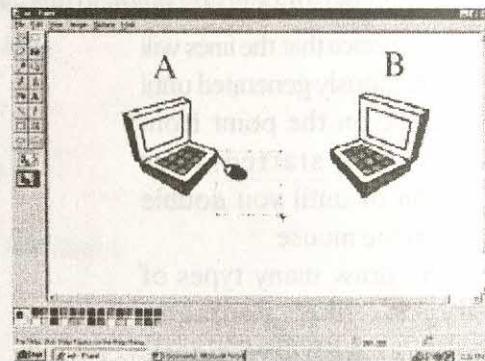
☺ **Click** on **Select** tool. The mouse pointer will change to a plus sign.

☺ **Click** on the **top left** corner of the 'mouse' of the picture and **drag** the mouse pointer to the **right bottom** corner of the picture.

The 'mouse' of the picture will be enclosed by a dotted rectangle (called **Selection Box**).

☺ **Place** the mouse pointer on the picture. The pointer will change to a **small cross** with **four arrowheads**.

☺ Now **click** on the selected part of the picture.

☺ **Drag** the mouse to our desired position.

☺ **Release** the mouse button.

☺ The 'mouse' of Computer A has been moved and placed with the Computer B.

So '**moving**' saves our time and maintains the accuracy intact.

6.7 Flipping a picture

To **flip** a picture means to change the **vertical** or **horizontal** orientation of the picture. It is similar to a mirror image.

We can flip a picture in the following way.Let us observe the picture of the seahorse. The face of the seahorse is on the right side. Let us try to move the face of the seahorse on the left side.

☺ Select the picture.

☺ **Click** on **Image** menu. A drop down list will be displayed.

Flip/Rotate...	Ctrl+R
Stretch/Skew...	Ctrl+W
Invert Colors	Ctrl+I
Attributes...	Ctrl+E
Clear Image	Ctrl+Shft+N

☺ **Click** on **Flip/Rotate** option of **Image** menu.

The **Flip and Rotate** dialog box will appear.

☺ **Click** on **Flip horizontal** option (suppose we want to flip the selected picture horizontally.)

☺ **Click** on **OK**.

Flip and Rotate

Flip or rotate
- Flip horizontal
- Flip vertical
- Rotate by angle
  - 90°
  - 180°
  - 270°

OK
Cancel
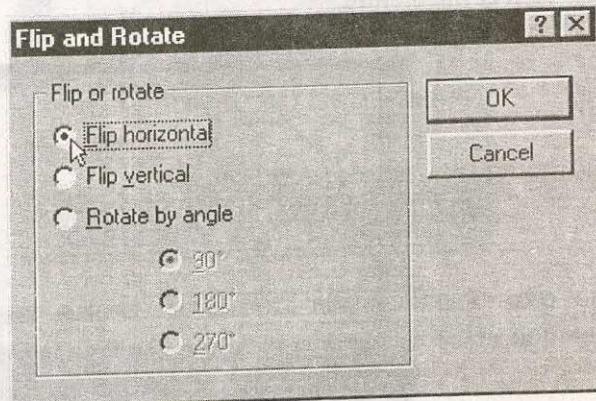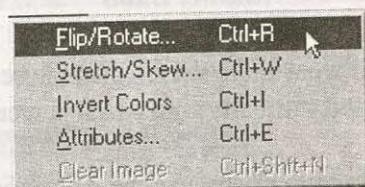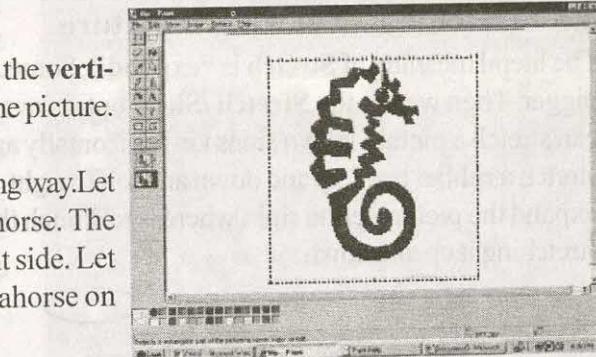
The **flipped picture** will be on the work area.

Wow! The sea horse is now looking on the left side.
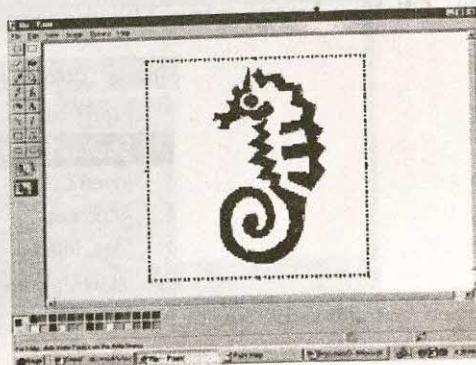
6.8 Stretching / Skewing a picture

The literal meaning of **Stretch** is **"expand"**. Sometimes we need to make our picture bigger. Then we use the **Stretch /Skew** option available with the **Image** menu. We can stretch a picture in two sides i.e. horizontally and vertically just the way we can stretch a rubber band up and down and left to right. To stretch horizontally means to expand the picture left to right whereas to stretch the picture vertically would imply stretching it up and down.

Rubber Band	**Stretch Horizontally**	**Stretch Vertically**

If we want to stretch the picture **proportionately** we stretch the picture horizontally and vertically with **equal** percentage.

Let us now try to stretch horizontally the picture of a face on our paint screen.
☺ **Select** the picture.
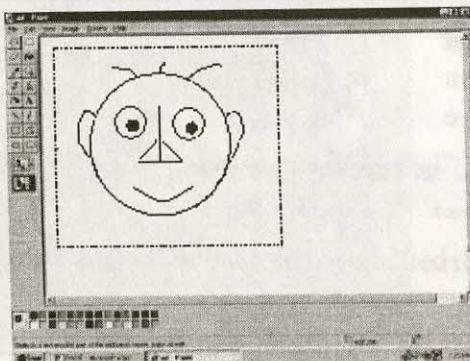
☺ **Click** on **Image** menu. The image menu will open with a drop down list.

Image	Colors	Help
Flip/Rotate...	Ctrl+R	
Stretch/Skew...	Ctrl+W	
Invert Colors	Ctrl+I	
Attributes...	Ctrl+E	
Clear Image	Ctrl+Shift+N	
✔ Draw Opaque		
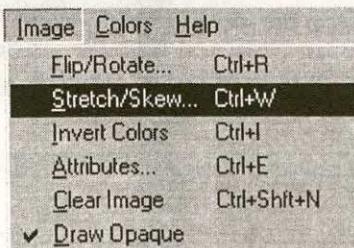
☺ Choose the **Horizontal** option in the 'Stretch' part and type, say **200** in the **percentage** text box. (Considering we want to double the length of the picture.) We can also type various other percentages like 25%, 50%, 150% etc.

☺ **Click** on **OK** button.
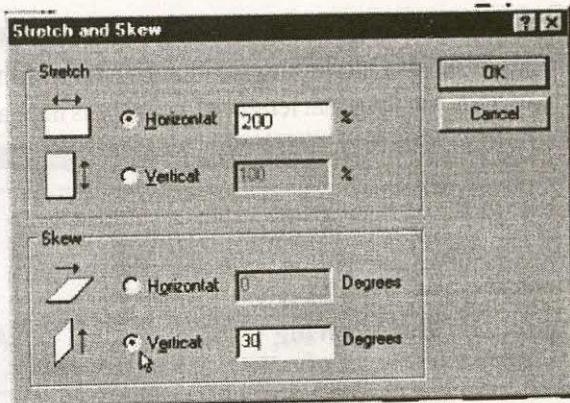
The **length** of our picture is **doubled** now.
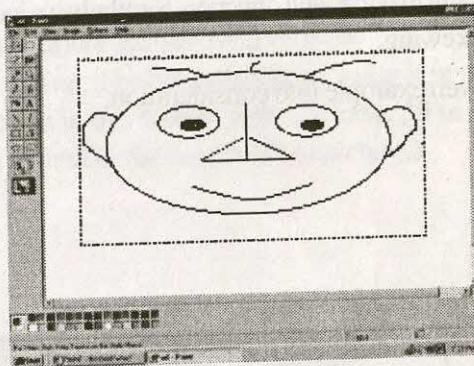
Similarly if we have chosen **Vertical** option instead of **Horizontal** in 3rd **step** , our picture will be stretched **vertically**. In this case the **height** of the picture will be **doubled**.
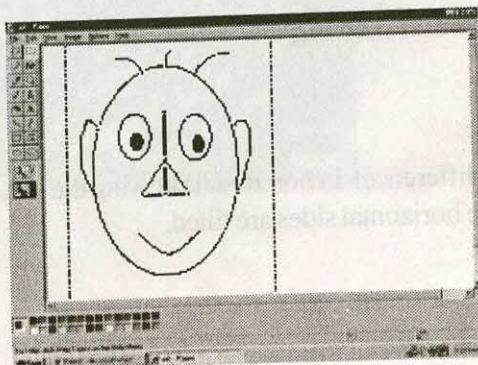
Literally **skewing** means **"tilting."** When we tilt a picture, we actually distort its shape. In case of stretching we increase the length or height of a picture, but in case of "skewing" the diagonal length of a picture is increased. The technique can be illustrated in the following way.
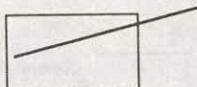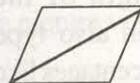
Before Skewing   **After Skewing**

We tilt a picture through a certain angle. We measure the tilting in **angles**. Tilting can be done **horizontally** and **vertically** as well. In **horizontal** skewing we increase the diagonal length in horizontal direction. Similarly we increase the diagonal length vertically in vertical skewing.

Take the given example into consideration.
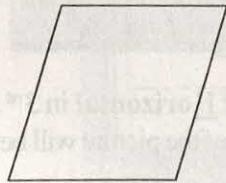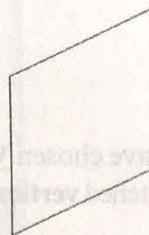
Horizontal skewing   **Vertical skewing**

Notice the difference! In horizontal skewing the vertical sides are tilted and in vertical skewing the horizontal sides are tilted.

Let us try to skew the picture horizontally on our paint application screen.

☺ **Select** the picture.
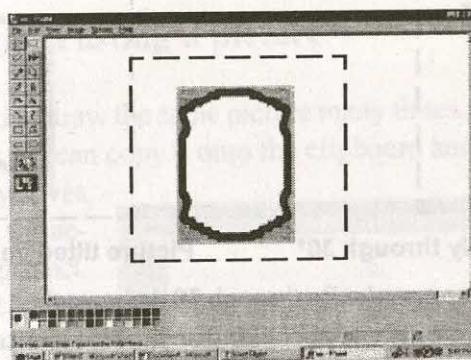
☺ **Click** on **Image** menu. A drop down list will be displayed.
☺ **Click** on the **Stretch/Skew** option. The **Stretch/Skew** dialog box will appear.
☺ **Click** on the **Horizontal** option in the 'Skew' part and enter **30** in the **degrees** text box. (Suppose we want to double the length of the picture.)
☺ **Click** on **OK** button.
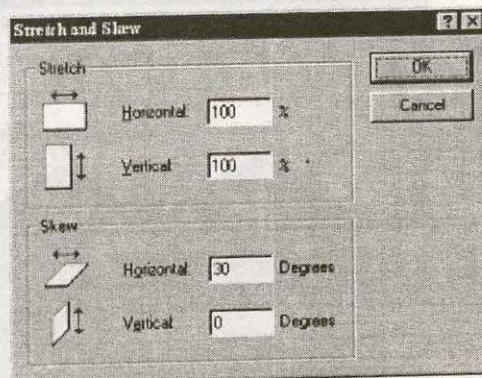
You will notice that the given picture is tilted **horizontally** through **30** degrees.
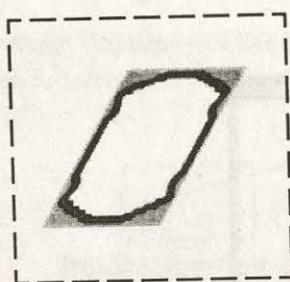
Picture tilted horizontally through 30⁰   **Picture tilted vertically through 30⁰**
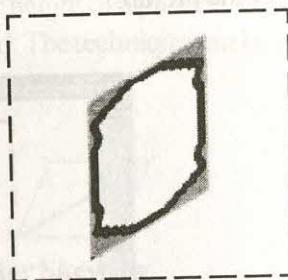
If we want to tilt the picture **vertically** through **30** degrees, then we will do the same procedure given above; just instead of clicking on the **Horizontal** option we have to **click** on the **Vertical** option in the 'skew' part.

6.9 Entering text on a picture

Sometimes it is needed to give captions to a picture. Paint provides us a **tool** known as **text tool** to insert captions or texts in a picture. Not only captions, but also simple texts, legends, indexes can be written with the help of a text tool.

To insert text on the paint screen we should follow the steps below.

Let us consider the picture of a natural scenery. In the given picture let us try to insert the text "Good Morning".

☺ **Click** on the **text tool**.

☺ **Select** the area where we want to enter the text. A **dotted line** will appear around the selected area. We will see a **cursor** blinking in the selected area.

☺ Type' **Good Morning**'.
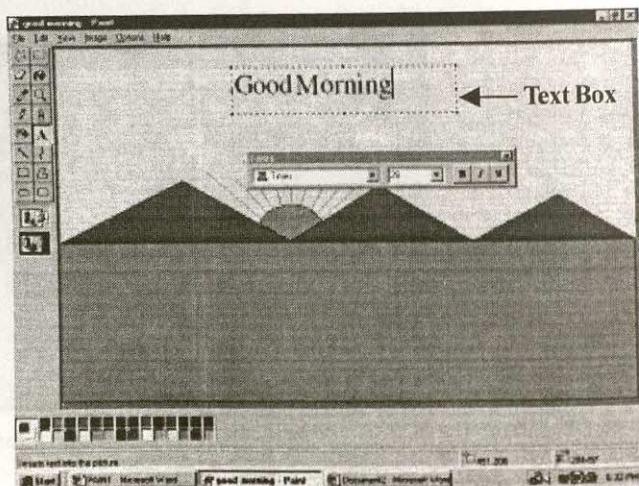
☺ **Click** outside of the selected area.

The inserted text has now become a part of the picture and acts as a caption.

6.10 Copying and Pasting a picture
Copying a picture

Sometimes we need to draw the same picture many times. Instead of drawing the picture many times we can copy it onto the clipboard and paste it to our desired

position. It not only saves time but also keeps the accuracy of our drawing intact. To copy a picture we should follow the steps given below. Here we have drawn a picture of a monkey and with the aid of copy feature we will draw the picture of two monkeys.
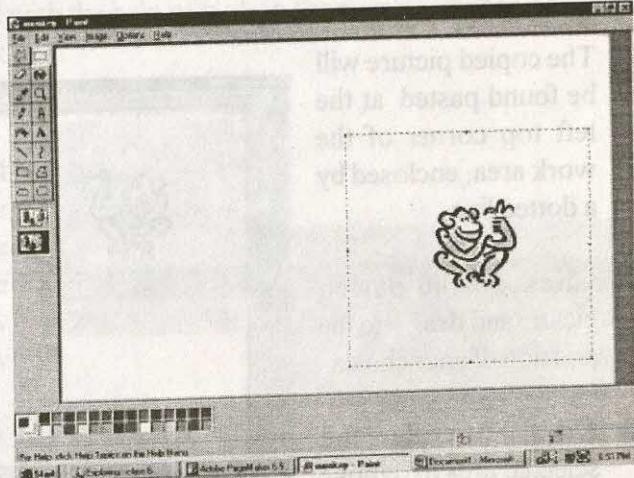
☺ **Select** the picture. A dotted line will appear around the selected area.
☺ **Click** on the **Edit** menu. A drop down list will appear.
☺ **Click** on **C**opy option.

The selected picture is copied onto the clipboard.

Undo	Ctrl+Z
Repeat	F4
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Clear Selection	Del
Select All	Ctrl+L
Copy To...	
Paste From...	
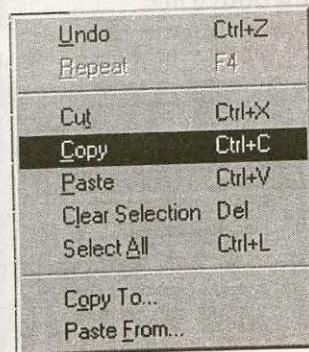
Pasting the copied picture

To **paste** the copied picture at our desired location we follow the given procedure.

☺ **Click** on the **E**dit menu. A drop down list will open.

☺ **Click** on **P**aste option.
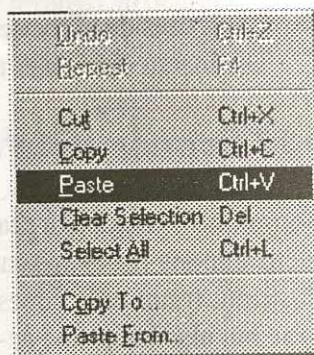
The copied picture will be found pasted at the left top corner of the work area, enclosed by a dotted line.

☺ **Click** on the pasted picture and **drag** it to the position of your choice.

☺ **Click** outside the selected area to remove the dotted line.
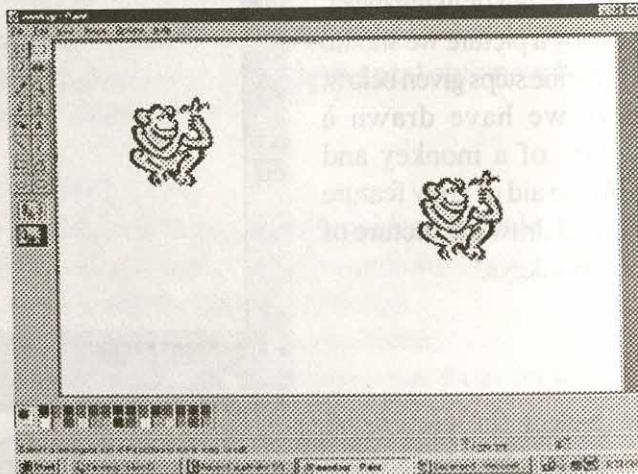
Now there are two monkeys on our paint screen sitting beside.
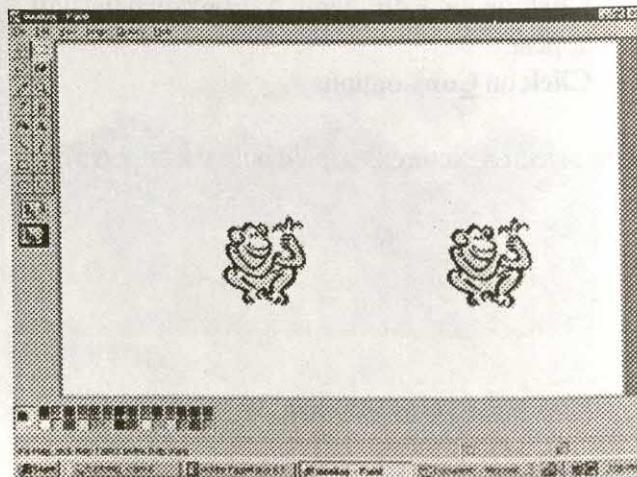
6.11 Zooming a picture

The literal meaning of "Zoom" is "increase sharply".

With the help of zoom feature we can see the details of even the minutest part of any picture easily.

This helps us to modify any picture without difficulty.

Suppose, you have drawn a picture of a bird. You have drawn its beak in red colour. Now you want to change the colour of the beak to blue. But you will notice that the beak is too small to be edited with the help of tools in the normal paint screen. How will you edit only the beak keeping the rest of the picture intact? Let us try!

If we get a largrer picture of the bird, then the size of the beak will be increased. So we have to get a larger view of the bird. To obtain the larger view of the bird we have to follow the given steps:

☺ Click on **View**

The **View** menu will appear.

☺ Click on **Zoom** option.

A drop down list will appear appear on the screen.

☺ Click on **Large Size**.

Or you can press **Ctrl** and **PgDn** simultaneously.

Wow!!

The picture you have drawn has been magnified.

We can also increase the actual size (100%)of a picture to different sizes with the help of **Custom** option under **Zoom** option. There are five options in Custom zoom option viz. 100%(actual size), 200%, 400%,600%,800%.

To get the normal size of the picture we have to follow the given steps :

☺ Click on **View | Zoom | Normal Size**.

Alternatively , you can prees **Ctrl** and **PgUp** keys simultaneously to get the normal size of the picture.
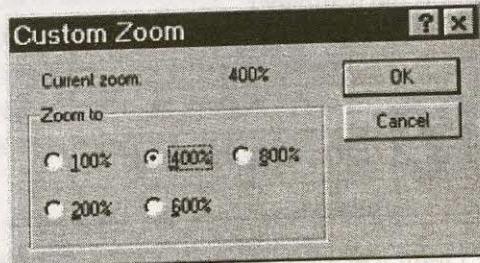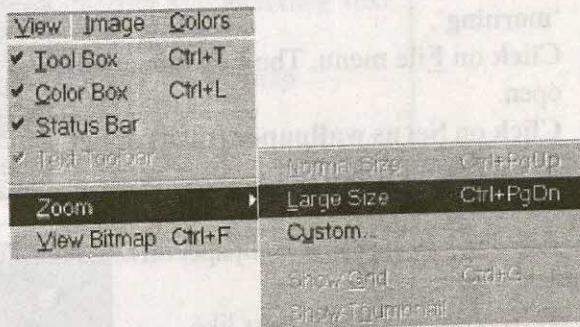
6.12 Saving a picture as Wallpaper

We can place our drawing as a wallpaper to appear on our Windows desktop. We also can place the wallpaper as tiled or centred fashion. Suppose we want the picture of the rising sun, saved as '**morning**', as the wallpaper on our desktop, we should follow the steps below to do this.

☺ **Open** the picture of the rising sun, saved as '**morning**'.

☺ **Click** on **File** menu. The **File** menu will open.

☺ **Click** on **Set as wallpaper (tiled)** or **Set as wallpaper (centred)**.
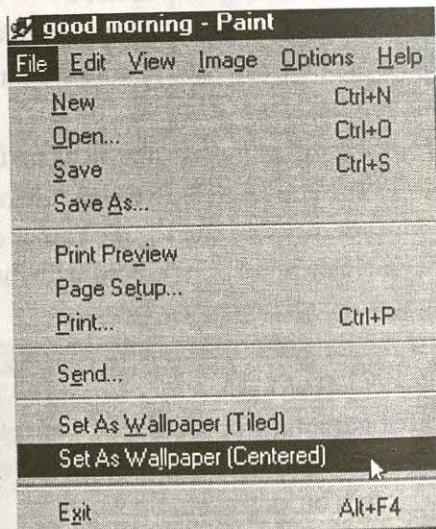
Our drawing will appear as wallpaper on our desktop.

To see how the wallpaper looks like click on the minimized button of the Paint application window.

Now whenever we switch on our computer we will see the picture of the rising sun as the wallpaper.
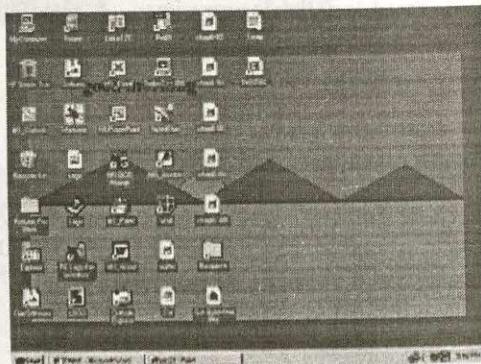
(?) *Do it yourself*

1. Draw a picture of a Bird flying in the sky.
2. Change the direction of Bird with flip tool.
3. Change the size of the Bird with strectch tool.
4. Give a suitable caption to your picture.
5. Set your picture on wallpaper.

Chapter 7
Word Processing

We will learn about

7.1 Word Processing

In the ancient times people used to write with various means like metal pieces and stone, feathers and ink on different type of leaves etc. Ancient books written by great saints, reformers are still preserved in that form in libraries and museums. Those writings took very long to be copied because it was done by hand. Later with the invention of paper and advent of printing press, machines were used to make many copies of the same document. This was followed by the invention of typewriter where individuals could create a document by typing himself.

However with the invention of computer a new methodology was developed called word processing. Word processing is actually the method of writing using a computer and a software.

The main advantage of word processing program is its flexibility and ease of use.

With any of the older systems once a word was printed down with ink it was unchangeable. On the contrary there is absolutely no limit to the number of modifications one can make to a document in a word processing program.

One can insert, delete, move, copy and do several things to a document within a few seconds. This was never possible with any of the earlier methods of writing.

There are various types of word processing programs e.g Word Perfect, Wordstar, Page plus etc. available having different types of user friendly features. Even today software developers around the globe work hard to add more and more features to such word processing applications.

Word processing Document:

Whenever you type in a word processing program, a document is created. This document can be stored in the computer ,modified as per our requirement and printed as many times as we like. A word processing document can hold anything for e.g. a leave application, a birthday invitation, a story and even a complete book.

7.2 Starting MS -Word Application
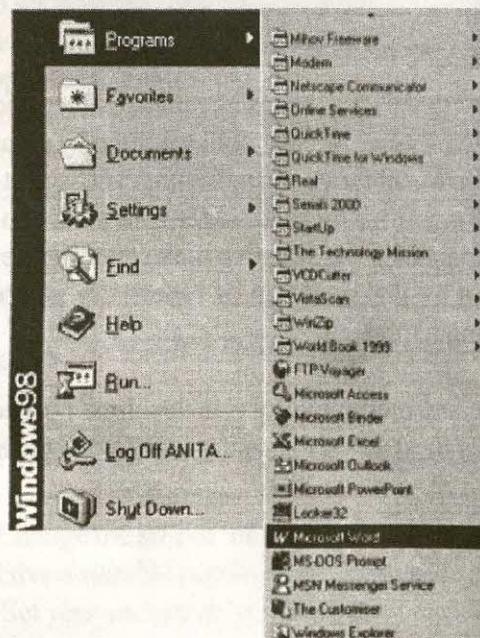
☺ Click on the **Start** Button. | Click on the **Programs** option | Click on **Microsoft Word** application.

We get the initial screen of Ms-Word application. There are many buttons and other controls on it.
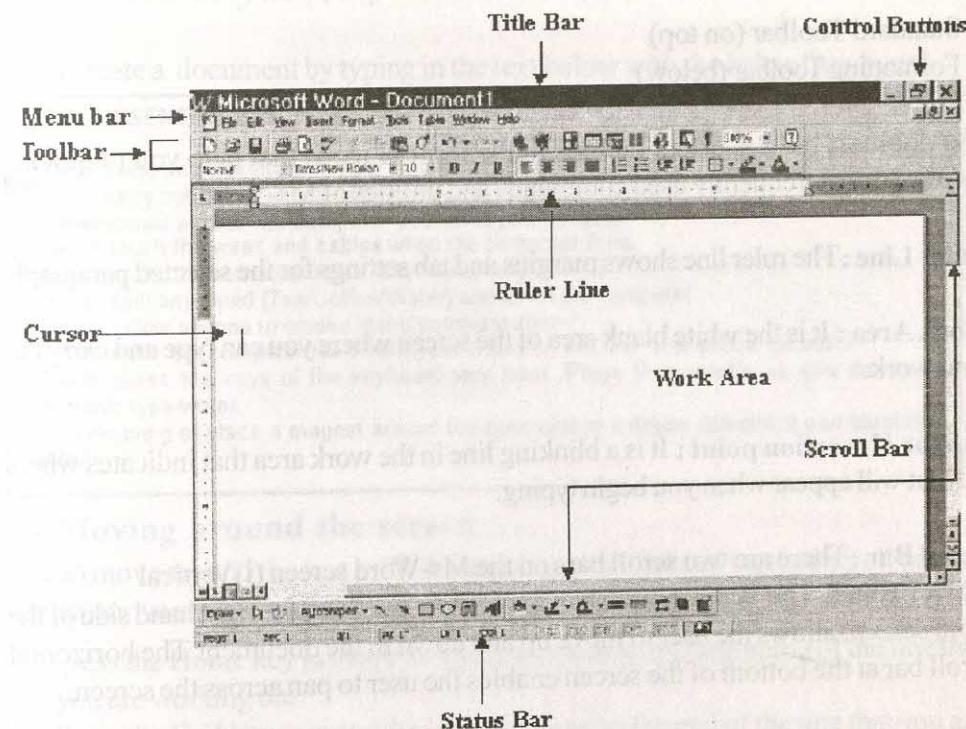
Let us learn about the buttons and icons:

Title Bar : It is a bar displayed on the extreme top of the document that displays the name of the current document.Initially Ms-Word automatically names your document as **Document 1**. After working on it you may change it to an appropriate name while saving the document.

Menu Bar : This is located just below the Title Bar.
This displays a list of options such as **F**ile, **E**dit, **V**iew, **I**nsert, F**o**rmat, **T**ools, Ta**b**le, **W**indow and **H**elp. By clicking on these options we can avail several commands through which we can carry out various functions.

Menu buttons are followed by control buttons at the right most corners.

There are 3 buttons in control buttons. (1) Minimise button (2) Restore/maximise button (3) Close button. You have already learnt the functions of these buttons in "Windows operating system" chapter.

Toolbar : This bar is located just below menu bar. Generally there are two tool bars placed one below the other.

i. Standard Toolbar (on top)
ii. Formatting Toolbar (below)

The toolbars have shortcut buttons in the form of icons that help you to quickly access to most frequently used commands and utilities of Ms-Word.

Ruler Line : The ruler line shows margins and tab settings for the selected paragraph.

Work Area : It is the white blank area of the screen where you can type and carry out your work.

Cursor / Insertion point : It is a blinking line in the work area that indicates where the text will appear when you begin typing.

Scroll Bar : There are two scroll bars on the Ms-Word screen (i)Vertical (ii) Horizontal. The Vertical scroll bar, which is found along the right hand side of the word screen, allows the user to move up and down in the document. The horizontal scroll bar at the bottom of the screen enables the user to pan across the screen.

Status Bar: It is the bar at the bottom of the screen. The Status Bar displays information about the current command, or about the Word Environment. It gives information about the position of the cursor in the current document (Page number, Line number, Column number etc.).

7.3 Entering Text

You have already learnt about the cursor or insertion point. If you type a few lines of text , you will notice that you don't need to press Enter Key at the end of the each line. The program automatically moves down or wraps to the next line of the document. You need to press the "Enter" key whenever you want to start a new line or paragraph.

? Do it yourself

Let us create a document by typing in the text below with the help of keyboard.

SOME ESSENTIAL DON'TS

1. Never twist any diskette with your hands.
2. Don't carry out cleaning unless the computer is safely covered.
3. Never crowd around the computer and never jerk its table.
4. Never touch the wires and cables when the computer is on.
5. Never make the computer-room dirty in any way.
6. Never spill any liquid (Tea/Coffee/Water) about /on the computer.
7. Do not allow anyone to smoke in the computer-room.
8. Never enter the computer-room with your shoes on lest any dust should go into it.
9. Never press the keys of the keyboard very hard. Press them gently as you do on an electronic type-writer.
10. Never bring or place a magnet around the computer or a floppy diskette. It can harm the system.

7.4 Moving around the screen

We can move around the text with the help of horizontal and vertical scroll bar. We can also move around with the help of keyboard.

☺ Press the **Home** key to move the insertion point to the beginning of the line that you are working on.

☺ Press the **End** key to move the insertion point to the end of the line that you are working on.

☺ Press the **Page Up** key to move up one screen at a time.

☺ Press the **Page Down** key to move down one screen at a time.

☺ Press **Ctrl** and **Home** keys together to move you to the beginning of the document.

☺ Press **Ctrl** and **End** keys together to move to the bottom of the document,

7.5 Inserting, Selecting and Deleting text

Whenever you start typing , the document is always on the **"Insert Mode"**. This means when you want to add text in a document ,simply place the insertion point where you want the new text to be added and start typing.

Type in the sentence:
Computer is the most important subject in today's education.
Later you may feel that you have to insert the word " Science" after the word "Computer" to make the sentence more appropriate as given below.
Computer Science is the most important subject in today's education.

Procedure for inserting text in a document :

☺ Click the mouse after the character in the document where you want the new text to appear. You will find that blinking insertion point will appear.

Position of the Cursor

Computer | is the most important subject in modern education.

Inserted Text

Computer Science | is the most important subject in modern education.
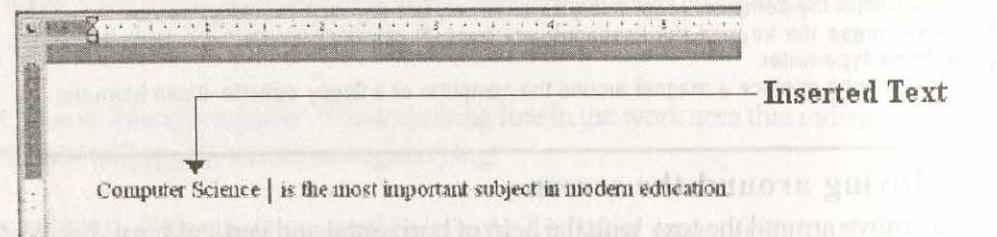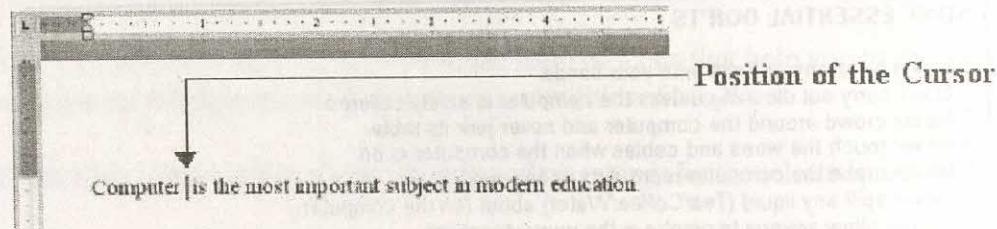
☺ Type in any new word or sentence. You will find that all the other letters on the line move to the right.

7.6 Selecting Text

To move, copy,delete or modify text, you have to select the text you want to edit. The selected text will appear in reverse i.e. black background with text in white. The selection will be made only on a sequential block of text,not bits of texts located in different places.

Procedure for selecting text

☺ Click on the text at the point where you want to begin the selection.
☺ Drag the pointer to the end of the selction.

Selected Text

Thus when we write a story , we create a document.
Word: Words are known as text.
Document: The entire text is called a document.
When you write something for the first time, you create a document. Say you write a letter or you write a story, in both cases you have to term them as documents.

Word Processing makes keying in, editing, storing and printing a document easier. We can increase or reduce the size of letters, texts, underline them, italicise them and can avail several other facilities with the help of word processor while working on a document. With Word Processing software, one can key in any document very fast.

There are different types of shortcut method for selecting text. Some of the methods are discussed below.

☺ To select one word, **double click** on the word.

☺ To select a sentence, hold down the **Ctrl Key** and click anywhere on the sentence.

☺ To select an entire paragraph, click three times (**triple click**) any where in the paragraph.

☺ To select the entire document press **Ctrl** and **A** keys simultaneously or click on **Edit | Select All**.

Procedure for selecting text using keyboard:

We can select any portion of text with the help of Shift key and relevant arrow keys.

☺ Place the cursor before the first character from where you want to select.

☺ Hold down the shift key and press the relevant arrow key until the last character is selected

Deselecting Text

If you have made a selection and want to deselect it

☺ Click anywhere on your selection.

or

☺ Click anywhere on the document, if you selected the entire document, the highlight will disappear from the text.

7.7 Deleting Text

You can delete unwanted text viz. a character, a word, a paragraph at a time, or any combination of the above.

There are two methods for deleting text.

Method I :

☺ Move the insertion point to where you want to delete.

☺ Press the **Delete** Key on the keyboard to delete text to the right of the insertion point, or use the **Backspace** Key (◄——) to delete text to the left of the insertion point.

Method II :

☺ Select the text to be deleted.The text will be highlighted.

☺ Press the **Delete** Key. You will find the highlighted text will be deleted.

7.8 Undo

There is a very interesting feature in Ms-Word application.Say you type a sentence and then make some modifications on it and later feel that the changes were not necessary and you want your previous sentence again in the place,you will be greatly helped by the **Undo** button.

You can just press the **Undo** button, and the computer will undo the last action you did. You can go on pressing the undo button , and the computer will keep undoing the previous actions. Alternatively, we can press **Ctrl** and **Z** keys simultaneously for undoing the last action.

7.9 Redo

You have just learnt the **Undo** option.Now, say you have pressed the **Undo** button accidentally, or you want to have your modified text back as it was, you can press **Redo** button. Alternatively , we can press **Ctrl** and **Y** keys simultaneously for redoing the last action.

7.10 COPY and PASTE features

The **"Copy"** features allows us to copy text to the computer's memory. We can paste that same text to another location in that document. For example let us say, you are writing a letter to your uncle about your School Computer Department and happen to use the word "Computer" in your document several times. One way to to do it is to type the word as many times as required. However a faster way would be to type it once (for the first time), copy it and then paste it whenever required.

☺ Select the text you want to copy.

☺ Click on the **copy** button or you can press **Ctrl** and **C** keys simultaneously. Although you will not find any change on the screen ,but be rest assured that the text has been already copied on the clipboard.

☺ Bring your cursor to the point where you want to paste your text from the clipboard.

Copy Button

Let us learn cut,copy and paste features.

Insertion point   **Selected Text**

☺ Click on **Paste** Button or you can press **Ctrl** and **V** keys simultaneously.
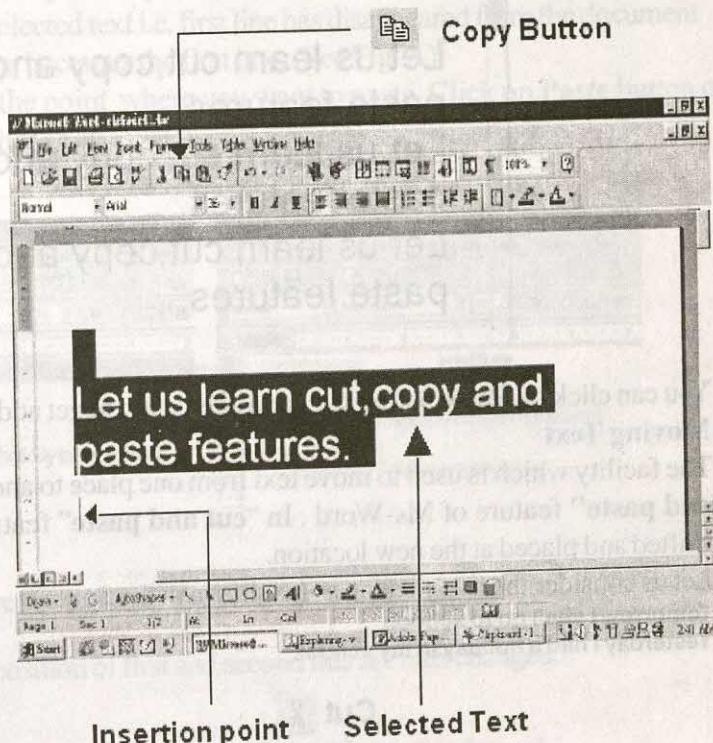
You will find that the text **"Let us learn cut,copy and paste features"** which was copied on the clipboard will appear in the document starting at the insertion point.

Let us learn cut,copy and paste features.
Let us learn cut,copy and paste features.
Let us learn cut,copy and paste features.

You can click on **Paste** button over and over again to get additional copies of text.

Moving Text

The facility which is used to move text from one place to another is termed as **"cut and paste"** feature of Ms-Word . In **"cut and paste"** feature the original text is shifted and placed at the new location.

Let us consider the two sentences. (as shown in the figure)

Tomorrow I shall go to school.
Yesterday I had a holiday in my school.

Cut

Tomorrow I shall go to school
Yesterday I had a holiday in my school.
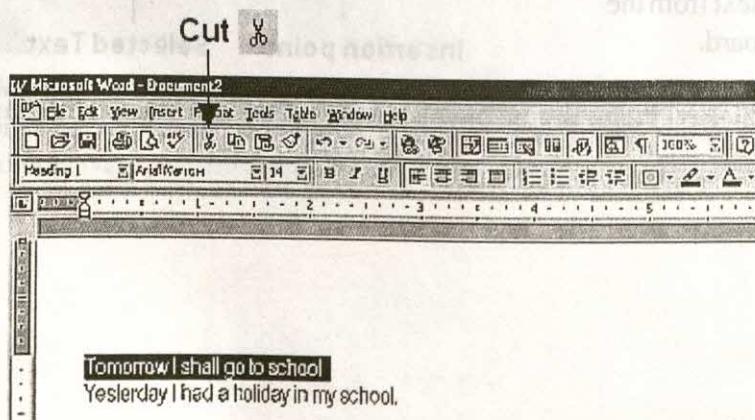
Now, say you want to interchange the position of the first and second line in the following fashion:

Yesterday I had a holiday in my school.
Tomorrow I shall go to school.

Procedure for moving text
☺ Select the text (first line) that you want to move.
☺ Click on **Cut** Button or you can press **Ctrl** and **X** keys simultaneously.
You will find that the selected text i.e. first line has disappeared from the document and thus the second line becomes the first one. (See Fig. A)
☺ Place the cursor at the point where you want to paste. Click on **Paste** button or **Ctrl** and **V** keys together. (See Fig. B)

Yesterday I had a holiday in my school.

Figure A

Yesterday I had a holiday in my school.

Tomorrow I shall go to school.
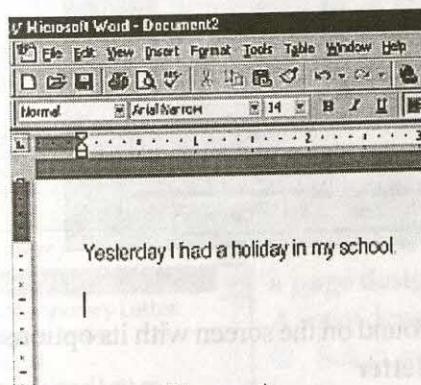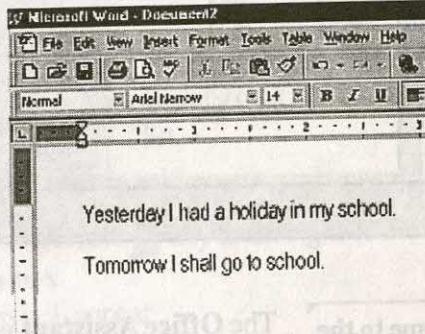
Figure B

You will find that the position of first and second line are interchanged.

7.11 Creating a letter with the help of letter wizard
You must have seen magicians also known as wizard who with the help of their magic wand make things happen in seconds.Normally when we write a letter we have to take care of the Margins, Date,Reference Number,Page Layout and several other options.In Ms-Word we have a Letter Writing Wizard which provides us options on the methods of writing letters and guides us through the entire process. All major decisions like layout of the letter,margin,alignments,dates are made for us; we only have to choose through this various options available through the wizard.Thus the letter created through the wizard carries a professional look. We can also create an envelope through the help of this wizard.

☺ Click on **File | New**. The **New** dialog box will appear on the screen.
☺ Click on **Letters & Faxes** tab.
☺ Click on the **Letter Wizard.wiz** icon.
You will be able see a preview of the letter layout in the **Preview** window.
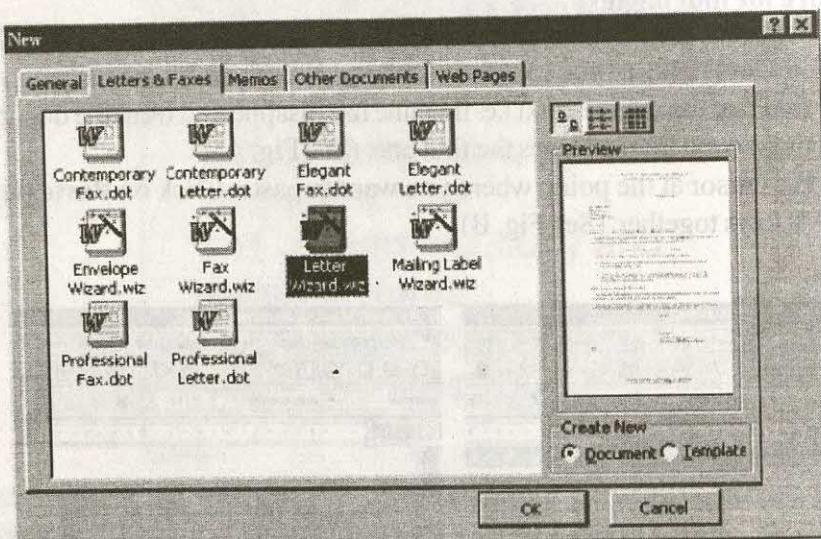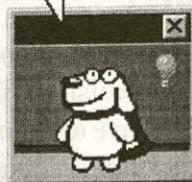
The **Office Assistant** is found on the screen with its options.
☺ Click on **Send one letter**
The **Letter Wizard - Step 1 of 4** dialog box will appear on the screen.
☺ Click on **Letter Format** tab.
☺ Click on the **Date line** box. The ✓ (tick mark) will appear on **Date line** box.

[In every letter whether official or personal you will find a date mentioned by the sender. The receiver can thus understand on which day the letter was written. Some people write the date on the top left, while others may prefer writing on the top right. You may choose to write the date in different formats. Ms-Word allows the user various options for writing date.
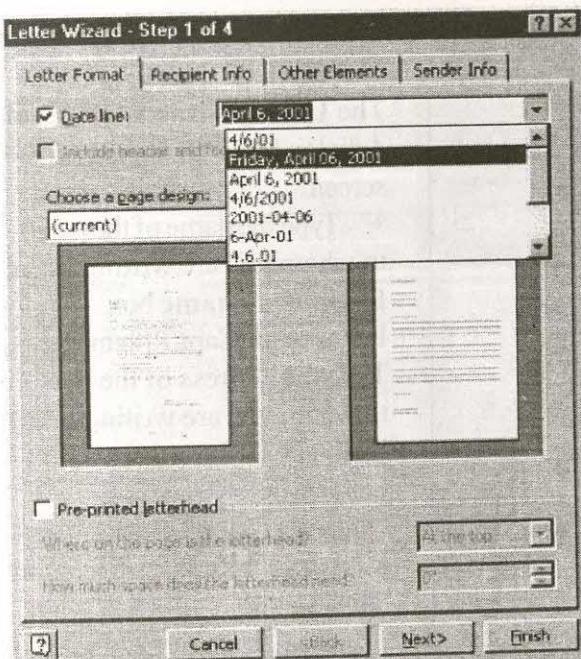
Some of the options can be seen in the figure .

This check box will include a date in the letter.

☺ Click on down arrow ▼ to the right of the **D**ate line.

A list of different formats of dates will apeear.

☺ Select any date format by clicking on it from the drop-down list.
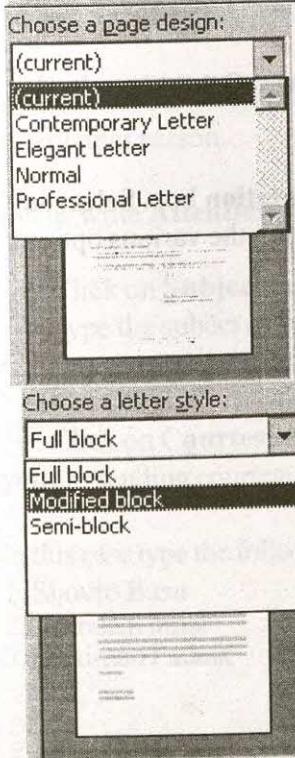
☺ Click on down arrow ▼ key to the right of the **Choose a page design** box.
A list of designs will appear.
☺ Select any design by clicking on it from the drop-down list. Let us select **current** option.

☺ Next click on down arrow ▼ **Choose a letter style** box. A list of styles will appear.
Select any style by clicking on it from the drop-down list.
Let us select **Modified block**.

Letter Wizard - Step 2 of 4   [?] [X]

| Letter Format | Recipient Info | Other Elements | Sender Info |

Information about the person you are sending a letter to

Click here to use Address Book: [📖] [▾]

Recipient's name: Capt. Rohan Rao   [▾]

Delivery address: "Summer Camps Centre"
                    1/1A , J.L.N Road
                    Shimla.

Salutation

Example: Dear Mr. Jones,   ○ Informal
                                                ● Formal
           Dear Capt. Rao,   [▾]   ○ Business
                                                ○ Other

[?]   Cancel   <Back   Next>   Finish
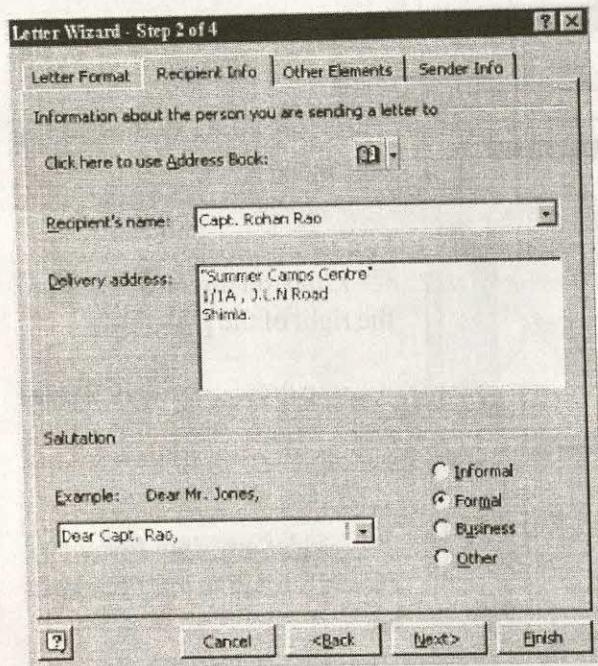
☺ Click on **Next>**.
The **Letter Wizard -Step 2 of 4** dialog box will appear on the screen.

☺ Type the name of the person to whom you are writing in the **Recipient's name** box.
Let us type "Capt.Rohan Rao"
Type the address of the person to whom you are writing in the **Delivery address** box.
Let us type
"Summer Camp Centre"
1/1A, J.L.N Road
Shimla.

☺ Select the type of salutation (**Informal, Formal , Business, Other**) by selecting the option (by clicking). Let us select "Formal"

☺ Click on the down arrow key [▾] to the right of the **Salutation** box. Select any salutation by cicking on it from the drop-down list. Let us see the various options available in the salutations.

| Dear Capt Rao, | [▾] |

Dear Capt. Rao,
Dear Mom and Dad,
Dear Rajaesh,
Dear Sir or Madam:
Ladies and Gentlemen:
To Whom It May Concern:
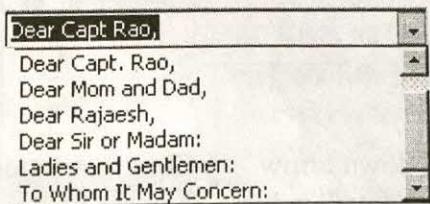
Let us select "Dear Capt.Rao,"

The dialog box screenshot shows:

Letter Wizard - Step 3 of 4

Tabs: Letter Format | Recipient Info | Other Elements | Sender Info

Include

☑ Reference line: In reply to:Your letter dated 16th March,01

☐ Mailing instructions:

☑ Attention: Attention:Mr.Rao

☑ Subject: Subject:Summer Camp (10th June - 17th Jun

Courtesy copies (cc)

Click here to use Address Book

Cc: Shuvro Basu
Aninda Kumar
Diptiman Pathak

Buttons: Cancel | <Back | Next> | Finish

☺ Click on **Next>**.
The **Letter Wizard Step 3 of 4** dialog box will appear on the screen.

☺ Click on **Oher Elements** tab.In the **Other Elements** tab you can select certain items from a list to be included in your letter.

☺ Click on the **Reference line** box.The ✓ will appear on **Reference line** box. This will add a reference line to your letter.

Let us type **In reply to: Your letter dated 16th march,01**

☺ Click on **Attention** box. The ✓ will appear on **Attention** box. This will add an attention line to your letter, which directs the letter to a particular person.

Let us write **Attention: Capt. Rao**

☺ Click on **Subject** box.The ✓ will appear on **Subject** Check box.
☺ Type the subect of your letter in **Subject** box.
Let us write **Subject: Summer Camp (10th June - 17th June), 2001**

☺ Click on **Courtesy copies(cc)** text box.Type the names of the people to whom you are sending courtesy copies of your letter.

In this case type the following names:
1. Shuvro Basu
2. Aninda Kumar
3. Diptiman Pathak

Letter Wizard - Step 4 of 4

Letter Format | Recipient Info | Other Elements | Sender Info

Information about the person sending a letter

Click here to use Address Book:

Sender's name: Anita

Return address: 71B, Alipore Road
Kolkata 700 027

☐ Omit

Closing

Complimentary closing: Sincerely,

Job title:

Company:

Writer/typist initials:

Best wishes,
Cordially,
Love,
Regards,
Respectfully yours,
Respectfully,
Sincerely yours,
Sincerely,

☐ Enclosures:

Preview

Sincerely,

Anita

Cancel | <Back | Next> | Finish

☺ Click on **Next>**. The **Letter Wizard -Step 4 of 4** dialog box will appear on the screen.

☺ Click on **Sender's name** text box and type the sender's name.
Here, we write "Anita".

☺ Click on **Return address** text box and type the sender's address.

Here the sender's address:
71B, Alipore Road,
Kolkata - 700 027

☺ Click on the down arrow to the right of the **Complimentary closing.** Select any complimentary closing by clicking on it from the drop-down list.

☺ Click on **Finish**.

Creating an Envelope

Do more with the letter?

● Make an envelope

● Make a mailing label

● Rerun Letter Wizard

● Cancel
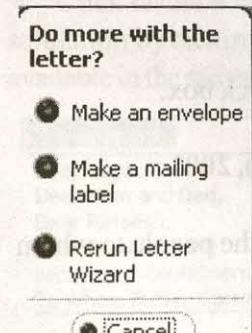
☺ Click on **Make an envelope**.

The **Envelopes and Labels** dialog box will appear on the screen. (See the Envelope-picture)
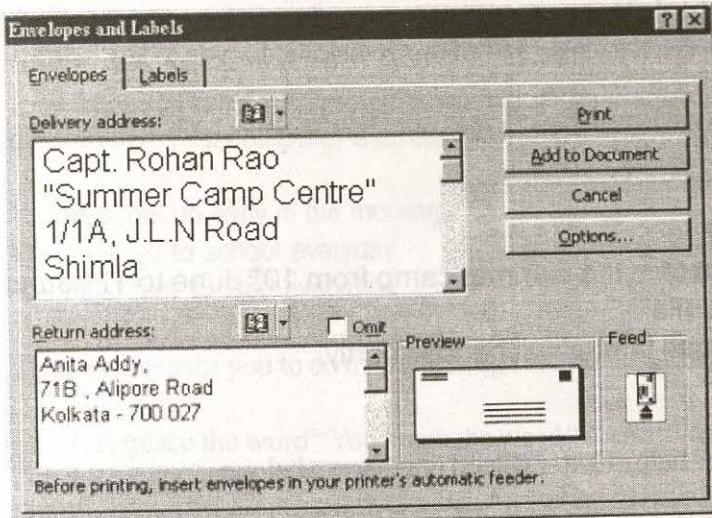
☺ Click on the **Envelopes** tab.

☺ Click on the **Delivery address** text box and type in the delivery address. Here the delivery address is :

Capt. Rohan Rao
"Summer Camp Centre"
1/1A, J.L.N Road
Shimla.

Envelope Picture

☺ Click on the **Return address** text box and type in the return address. Here the Return address is:

Anita Addy,
71B, Alipore Road
Kolkata - 700 027

☺ Click on **Add to document.**

We also have the option of printing the enevelope immediately by clicking on **Print.**

The enevelope becomes the first page of the document, which allows you to print both the envelope and the letter together.
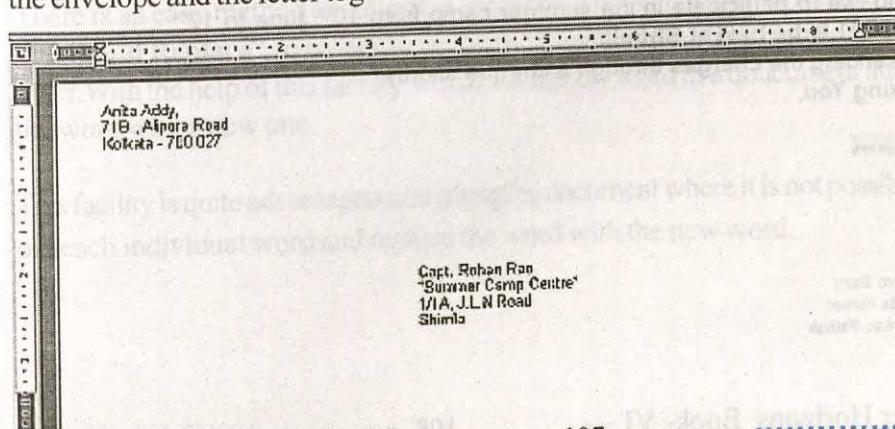
Typing Text into the letter

The wizard has now finished its magic and all that remains is for you to key in the body of the letter.

☺ Click three times on the instruction "Type your letter here," which is found below the subject line.

Type the following letter
I would like to participate in the summer camp from 10th June to 17th June 2001,to be held at Shimla.
I am sending the charges through a cheque shortly.
Thanking You,

The letter created with the help of letter wizard is as shown below:

Friday, April 06, 2001

In reply to: Your letter dated 16th March,01

Capt Rohan Rao
"Summer Camp Centre"
1/1A, J.L.N Road
Shimla

Attention: CaptRao

Dear Capt Rao,

SUBJECT:SUMMER CAMP (10TH JUNE - 17TH JUNE),2001

I would like to participate in the summer camp from 10th June to 17th June 2001,to be held at **Shimla**.
I am sending the charges through a cheque shortly.
Thanking You,

Sincerely yours,

Anita
cc Shuvro Basu
    Aninda Kumar
    Diptiman Pathak

7.12 Find and Replace

As soon as you enter the computer class ,say you notice the following lines written on the board by your computer teacher.

You must get up early in the morning.
You must go to school everyday
You must pray to God everyday.

The Teacher asks you to do the following exercise on the text given on the board.

Ex : 1. Replace the word "You" with the word "I" and "We" as shown below so that the output on the screen will be :
I must get up early in the morning.
You must go to school everyday.
 We must pray to God everyday.

Ex : 2. Replace the word "You" with the word "I" so that the output on the screen is:
 I must get up early in the morning.
 I must go to school everyday.
 I must pray to God everyday.

How will you do it?
You can do it by deleting and inserting word by word as you have already learnt .But this is a time consuming method.

There is an easy method to solve this problem. Ms-Word offers a feature known as **"Find and Replace"** to solve this problem . **Find and Replace** feature is a real time saver. With the help of this facility we can locate any word in a doucument and replace the word with a new one.

This facility is quite advantageous in a lengthy document where it is not possible to find out each individual word and replace the word with the new word.

Utility of Find command

The **Find** command is very useful to search out specific word or words from a document.

Let us see the procedure

☺ Click on **Edit**. The **Edit** menu will appear on the screen.

☺ Click on **Find.**

The **Find and Replace** dialog box will appear on the screen.

☺ Type the word " You" in **Find what** : text box.

☺ Click on **Find Next.**

Ms-Word will find out the first occurence of the word "You" mentioned in the **Find what** : text box.

☺ Click on **Find Next** again.

Ms-Word will take you to the next occurence of the word "You". You can continue it till you have reached last occurence of the word "You".

☺ Click on **Cancel** if you want to discontinue the search.

Ms-Word will notify you when no more occurence of the word "You" in the document occur with the help of a message box as shown in the figure.
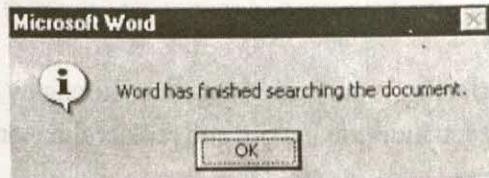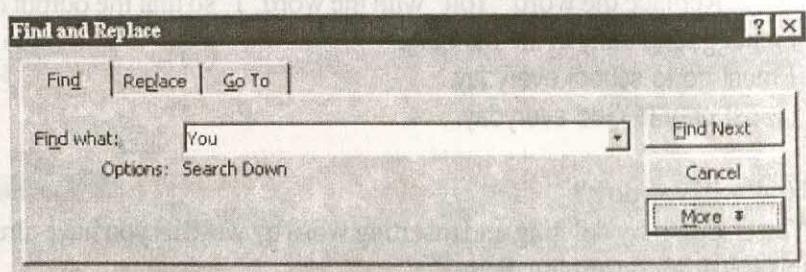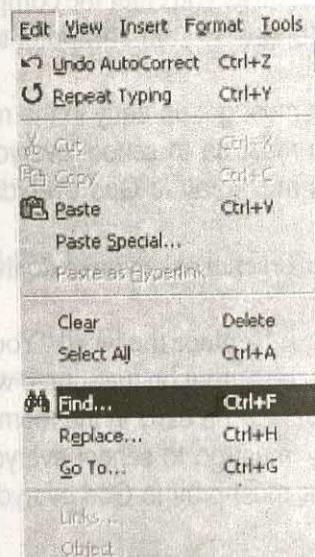
Replace

Replace command is helpful to locate the text as well as to change the text.

☺ Click on **Edit**. The **Edit** menu will appear.

☺ Click on **Replace**.

The **Find and Replace** box will appear on the screen.

☺ Click on the **Find what** : Text box.

☺ Type in the word "You" in **Find what** : Text box.

☺ Click on **Replace with** : Text box.

☺ Type in the substitute word "I" in **Replace with** : Text box.

☺ Click on **Find Next**. Ms-Word will find out the first occurence of the word "You".("You" in the first sentence) You will find the word "You" is highlighted.
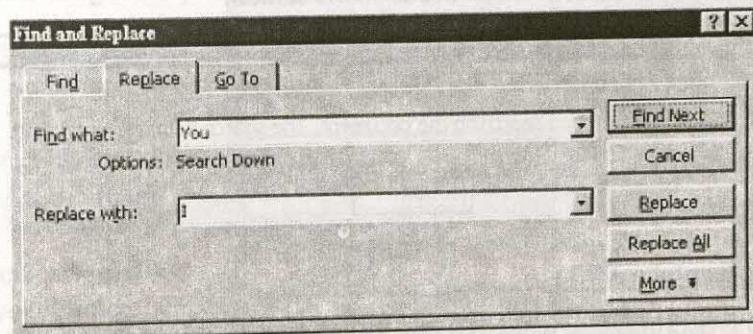
We have two options to replace the old text i. Replace ii. Replace All

i. **Replace** as the name suggests is used to replace the old text the with the new text, one by one, after taking the necessary permission from the user.

ii. **Replace All** on the other hand is used to replace all the occurences of the old text with the new text, at a time, without taking necessary permission from the user.

Option I :(Replace)

This option is helpful to solve the first problem given by your computer teacher where "You" is replaced by both "I" and "We". In this case this option is useful because you have to replace the word "You" one by one.

☺ Click on **Replace**. The word "You" ("You" in the first sentence) will be replaced by "I" Ms-Word will highlight the next occurence of the word "You" .("You" in the second sentence)

☺ Since we do not have to replace the word "You" in the second sentence we have to click on **Find Next** to find the next occurence of the word "You" ("You" in the third sentence)

☺ Type in the word "We" in **Replace with**: Text box.

☺ Click on **Replace**.

Now we have found Ms-Word has given the following message box notifying that no such occurences of the word "You" occur on the screen.

Microsoft Word	☒
ⓘ Word has finished searching the document. The search item was not found.	
OK	
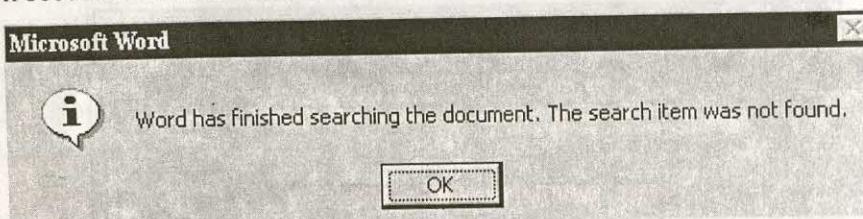
Option II (Replace All) :

This option is useful if you want to replace all the occurence of the found text with replaced text at a time instead of doing one by one. So this option is very useful to solve the second problem where all the occurence of the word "you" are replaed by the word "I" at a time.

☺ Click on **Replace All**.

You will find that Ms-Word has given the the message box as shown notifying you of the total number of replacements.

Microsoft Word	☒
ⓘ Word has completed its search of the document and has made 3 replacements.	
OK	
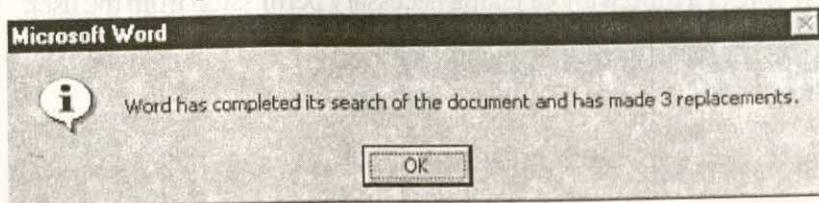
7.13 Word Art

We have already learnt to create a letter with the help of Letter wizard.
Say you are invited to your friend's birthday party and would like to present him a birthday card on the occasion. Instead of purchasing a birthday card for your friend from a shop you can design a card in your computer with the help of Ms-Word application and be sure your friend will appreciate it the most.Let us see what help we get from our software.

Ms-Word offers a splendid feature known as **Word Art.** Word Art Gallery is a collection of predefined style of text by which we can create various type of greetings cards,posters and banners in which you can apply millions of color combinations of your choice. You only have to attach your computer to a color printer to obtain the print out. Let us create a greetings card for your friend.

Procedure of applying Word Art to the document

☺   Click on **Insert | Picture | 4** Word Art.

WordArt Gallery will appear on the screen.

☺   Select a **WordArt** style of your choice.

☺   Click on **OK.**
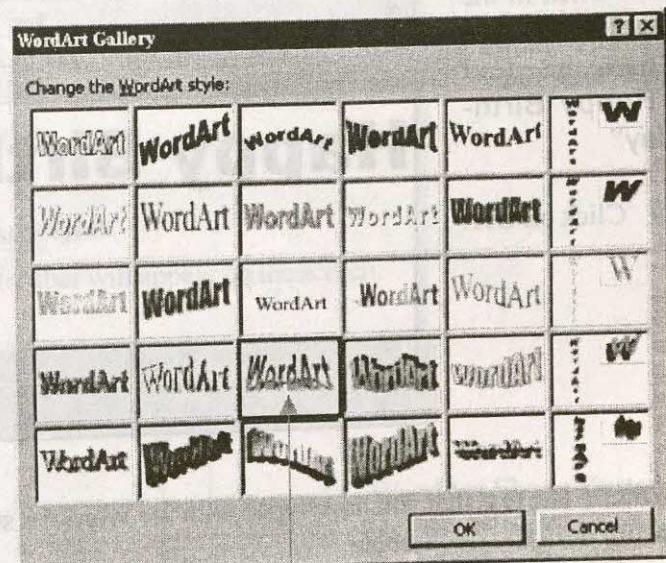
Selected Word Art Style

Edit WordArt Text box will appear on the screen.

A placeholder in the Text box says "Your Text Here"

Edit WordArt Text	? X
Font:	Size:
Arial Black	36 **B** *I*
Text:	

Your Text Here

OK   Cancel
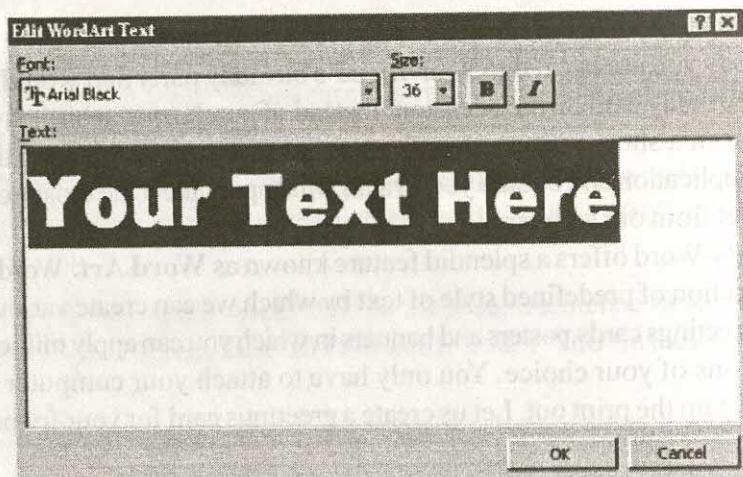
☺ Click in the Text Box and write down the text "Happy Birthday"

☺ Click on **OK**.

Edit WordArt Text	? X
Font:	Size:
Arial Black	36 **B** *I*
Text:	

Happy Birthday

OK   Cancel
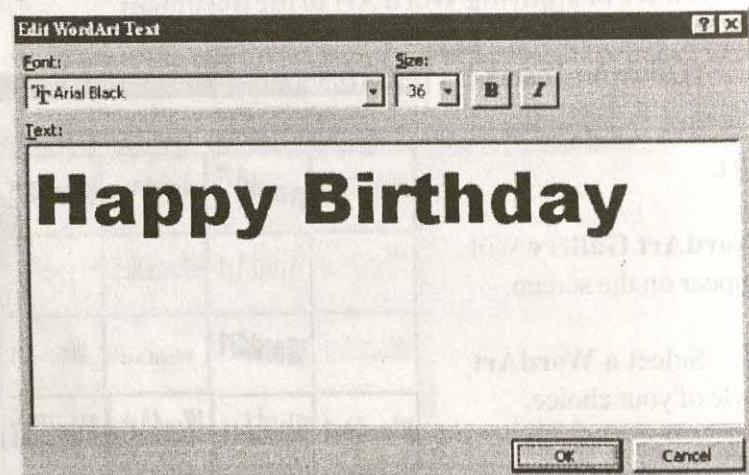
Wow!!! The text that you have typed with the Word Art style you selected is inserted in the document.

Moving Objects on a page

What is a Word Art object?

Word Art object, although written in the form of text are actually treated as drawing objects.

You can move Word Art object around the document.

☺ Click on the Word Art object. A four-headed arrow will appear.

☺ Press and hold the mouse button and drag the object to desired position.

☺ Release the mouse button. The WordArt object will be in the new position.

Four-headed arrow
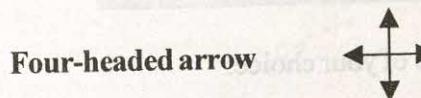
Reshaping an object :

You can also change the shape of the Word Art object. You can impose some different effects to your word art object by modifying the proportions of the object and changing its overall height or width.

How we can do this?

☺ Click on your Word Art object.

You will find **Word Art** toolbar will appear on the screen.

WordArt Shape Button

Free Rotate Button
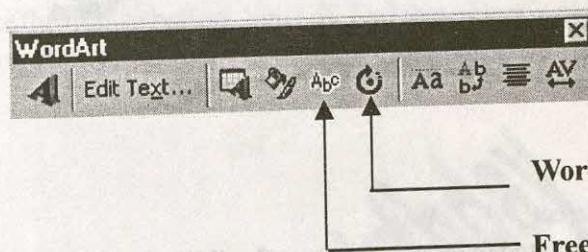
There are several buttons on the **Word Art toolbar** for performing various types of job.

We can change the shape of Word Art object with the help of **WordArt Shape** button.

☺ Click on Word Art shape button on the WordArt toolbar. You will find different types of shape will appear.(as shown below)

Button (Curve) shape
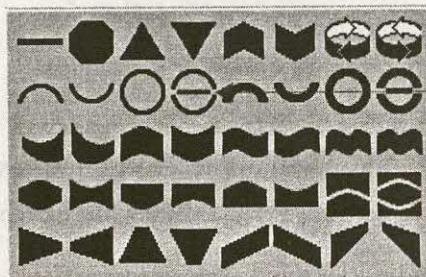
☺ Click on any shape of your choice.

Let us select the shape which is pointed by arrow

You will find your Word Art object will change to the shape that you selected.
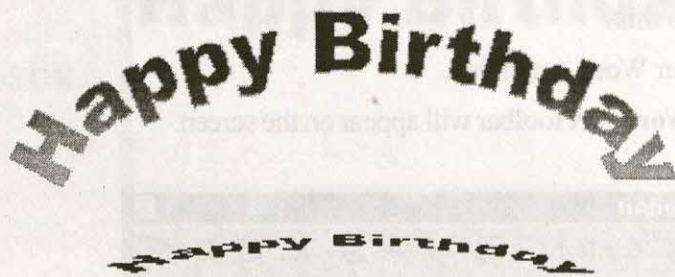
Rotating Word Art object
Word Art object can be rotated to give you greater flexibility in designing the layout.

☺ Click on the WordArt object.
☺ Click on **Free Rotate** button. The square selection handles will become rounded as shown in the figure.

☺ Press and hold the mouse button on one of the circular selection handles and drag the wordart object. A dotted line outline of the object in its new position will appear as you drag.

☺ Release the mouse button. You will find that object is placed in its new position.
☺ Click on **Rotate button** The rorate feature will be turned off.

7.14 Word Count

In your computer class , the computer teacher may ask you to write down an essay about the "Microprocessor" within 150 words. After writing down the essay you have to count the words.But it is very boring and difficult to count the words one by one. Ms-Word offers a facilty by which we can count the characters,words,lines, paragraphs and pages of any document in a moment.

Suppose, you have written the following document about the "Microprocessor" and you want to count the words in this document.

The main part, or the brain of the PC, is the microprocessor. As the main application was to process data, the name associated with the brain of the computer became the 'processor'. Therefore, the processor of a computer is that part of the computer which does the actual calculations. The processor is made of electronic circuits that perform calculations like additions and multiplication. Apart from this, the processor also helps in making comparisons, or performing logical operations.The term micro means very small. As the processor in the PC is very small , it is given the name microprocessor.

The microprocessor is not a very old invention. In fact, the first microprocessors were introduced around the 1970's. The microprocessor is the brain and heart of the PC. It performs all the calculations, takes logical decisions and controls the operation of the other cards of the PC.

How to do this?

☺ Open the document.

☺ Click on **Tools**.

☺ Click on **Word Count**.

You will immediately find that **Word Count** dialog box appears on the screen.

Word Count | ? | X
Statistics:

Pages	1
Words	146
Characters (no spaces)	744
Characters (with spaces)	903
Paragraphs	2
Lines	11

☐ Include footnotes and endnotes

Cancel
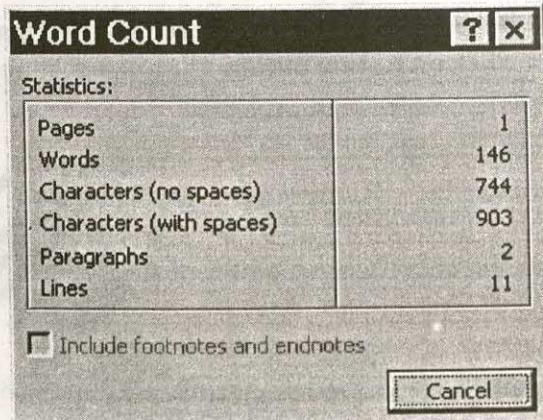
It will show all the statistics of currently active doucment.

<div align="center">

Chapter : 8
Multimedia

</div>

We will learn about

- ☺ **Introduction**
- ☺ **Use of Multimedia**
- ☺ **A multimedia system**
- ☺ **Different types of multimedia**

8.1 Introduction

You must have seen cartoons. These characters in the Cartoons can laugh, talk, sing, play and do all those things that you can do. The cartoon movies are full of colour and music. Have you ever wondered how these characters come to life? Before we go on to find out how it is done, let us understand some important things.

All the animations and movies that we see are actually different ways of expressing ideas. For example, all the cartoons like Mickey Mouse, Tom and Jerry etc. that we see have a story that is shown in the course of the cartoon. Thus, we can say that the cartoon is a medium of expression. This in turn consists of other media like sound, animation, text etc. All these combined togather is called "multimedia". "Multi" means more than one and "media" means method expression.

Now let us try to understand the uses of multimedia.

8.2 Use of Multimedia

One of the most important uses of multimedia is for education and entertainment. You have all seen that there are numerous CDROMS available today that can be used both for education and entertainment. These CDROMS contain software related to subjects like English, Science, Mathematics, Histoty and others. We can run these CDs from our computer.

But, we must remember somethig here. An ordinary computer system does not contain

some of the components that are required to see multimedia based programs.
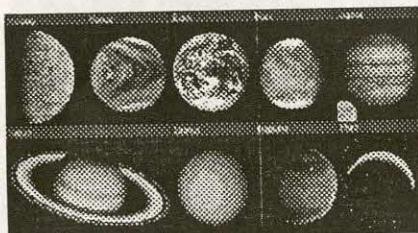
our solar system

a dinosaur fossil
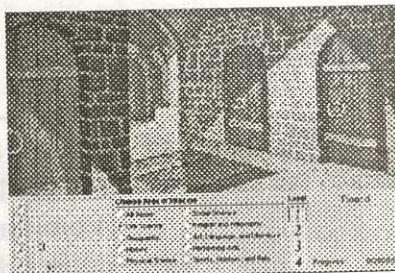
a multimedia game

8.3 A multimedia system

A typical multimedia based system consists of the following :
✓ A Personal Computer, with a suitable processor (like Pentium I/II) with a colour monitor, keyboard and mouse.
✓ A sound card (either in-built with the motherboard or as a separate card)
✓ A graphics card (in-built in the motherboard or as a separate one)
✓ Speakers
✓ CDROM drive (some people also use DVD Drives)
✓ A microphone

One of the most important feature of the multimedia system is the software. Usually a multimedia system consits of an operating system like Windows. Other software like graphics and sound manipulation programs are also needed.

8.4 Different types of multimedia.

Audio : Most multimedia programs come with sound. Some of them are quite realistic. For example we may have sounds generated from musical instruments and record the same on our computer. They can be recorded from a musical instrument like a synthesiser connected to the computer. One can play the musical notes on the synthesiser and record it on the computer for changing tones, balances, adding effects and playback.

Another way to create music is to create the same with the computer directly. The sound card present in the computer can imitate the function of a musical instrument. The sound cards available today can play more than 100 different types of notes from different instruments. With specail type of software, we can choose the instruments we

want to create music with, and then make the notes for the individual instruments. Then the computer composes the music with all these notes togather to give us the music we need.

How can you make the computer talk in your own voice? Wouldn't it be nice if the computer could talk just like you and me? To do this, we require a microphone connected to the sound card of the computer. With the "Sound Recorder" application that comes with Windows operating system, we can record our own voice and play the same from the computer.

How is the music stored in the computer? You have already learnt that to save information on the computer, we need files. And to store different types of information different types of files are required. To store music, either instrumental or human speech, we need files Sound files (like human speech) is usually stored in a particular type of file called "WAV" (Wave) files. These can store all the musical notes and voice and can be played back with the help of "Sound Recorder" application. The extension of these files are ".WAV".

The controls shown are the very similar to the audio players in our house. The first button is the Previous button, then the Next, then Play, then Stop/Pause and the last the Record buttons respectively.

To start the Sound Recorder, click on

Start | ProgramsAccessories | Multimedia | Sound Recorder (for Windows 95) or

Start | Programs | Accessories | Entertainment | Sound Recorder (for Windows 98)

To store music of instruments or recorded from instruments, another type of file is used called "MID" (from MIDI or Musical Instrument Digital Interface). They contain only the notes and the name of the instrument.
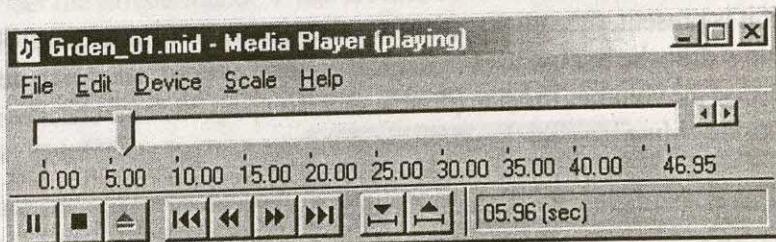
The sound card of the comptuer can then translate the notes of the individual instruments and playback the same for us. To listen to these type of files we require yet another type of application called the "Media Player". The media player can play back "MIDI" files.

The controls of the Media Player are similar to the Sound Recorder. It also has some extra buttons called the "Clip buttons" (two buttons present at the end) to select a part of the clip from a file for playback.

To start the Media Player, click on Start | Program | Accessories | Multimedia | Media Player (for Windows 95) or click on Start | Program | Accessories | Entertainment | Media Player (for Windows 98)

A word of caution. When recording music or voice, you must keep in mind that a "WAV" file requires at least a megabyte (MB) of space to store a minute's data. Hence, recording of long speeches or narrations can take considerable amount of harddisk space. One the other hand, a MIDI files needs very little amount of space since, it only contains the electronic equivalent of the notes of the instruments.
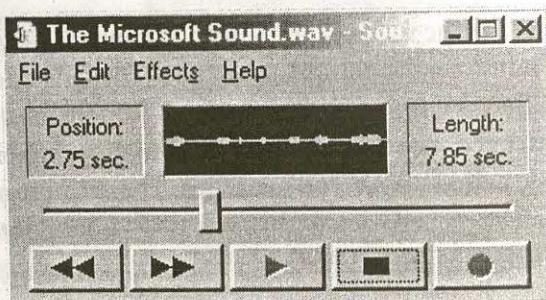
Increasing the volume

If you want to increase the volume of sound playing do the following:

Check the Taskbar to find if the ◀◀ icon is present.

If it is present, then click on it to see the picture of volume control. Now drag the bar up, to increase the volume or drag it down to decrease the volume. To Mute (disable sound output), click the checkbox beside "Mute".
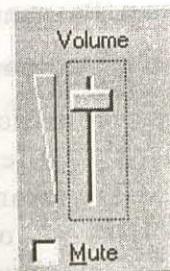
This is also called the "Volume Control Panel".

Speaking to the Computer

As discussed before, it would be quite interesting to hear the computer talk. But how? To record your own voice, you will need the Windows Sound Recorder application. You will also need a microphone connected to the sound hardware (Sound card) of the computer. To check whether your computer is responding to the sound input, click

on Start | Settings | Control Panel | Multimedia. You will see the picture below.

In this picture we can see the current selected sound device both for playing and recording. If you cannot see any device listed under the "Preferred device" in the "Recording" box, it means that the sound card of your computer is not capable of taking input from a microphone. In such a case, you need to change the sound hardware. In most modern computers, this is very rare.

After you have confirmed that your soundcard is suitable for recording, you are ready to start.

Start the Sound Recoder application as described before and click on the last button on the right. Now, bring the microphone close to your mouth and start talking. You will see that the sound recorder shows a graph in the center which denotes that the sound is being recorded. After finishing, you can save this recording to a WAV file for playback. To save click on **File | Save As** and enter the name of a file. Then click OK. Your file will be saved. You can also increase or decrease the volume from the "Effects" menu. You may also wish to add an echo. It is also available under the Effects menu. There are also other software that can record sound. Some can even convert what we say to text. These are called Speech-To-Text software. One of the most popular is "Dragon Naturally Speaking".
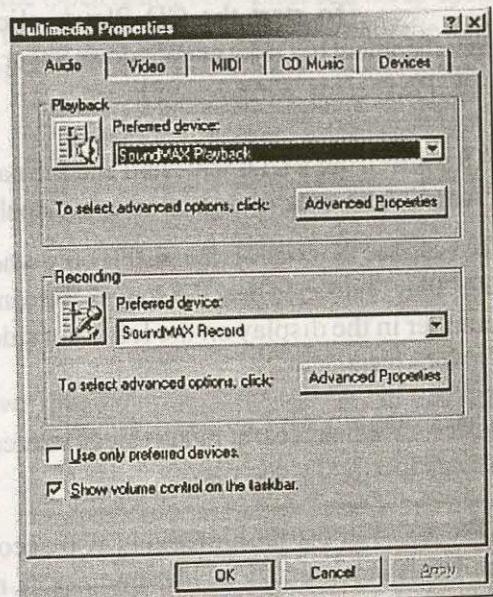
Playing Songs from a CD

All of you must have seen CDs of songs in your house. You need a CD Player to play those CDs. But, what if you want to listen to those while working on your computer? Yes, those same CD's can be played on your multimedia computer with the help of

a program called "CD Player". The name of the program suggests that it does what it says and the controls are quite similar to the CD Player we have at home. See the picture to understand it better.

To start the CD Player click on Start | Programs | Accessories | Entertainment | CD Player (Windows 98) or Start | Programes Accessories | Multimedia | CD Player (for Windows 95)

After inserting a CD, you shall see the name of the Artist is displayed in the Box "Artist". The track (Song) number is dispalyed in the "Track" list box.

You can see the controls are visible only when a CD is inserted. Then you can click on the "Play" button to hear the songs. We can also see the time remaining and the track number in the display on the left hand side. The display can be changed using the Options menu.

Video : We have learnt many things related to audio. Now let us learn a few things about video and video files.

Like audio, most multimedia is also accompanied by video. We see video in all multimedia presentations like animations, movies etc. How are these movies made? To understand how a movie is made, we have to understand a few basic things.

A movie is actually made of a series of pictures called "frames". These individual frames move a little forward and each frame consists of these movements. When we see these frames at a particular speed, it gives us an impression that the things in the picture are moving. Our eyes cannot find out the difference between a non-moving (static) pictures in the movie. The usual speed of a movie is 30-90 frames per second (fps).

Most games and multimedia presentations now come on CDs. We can play the movies with another application called the "Active Movie Control".
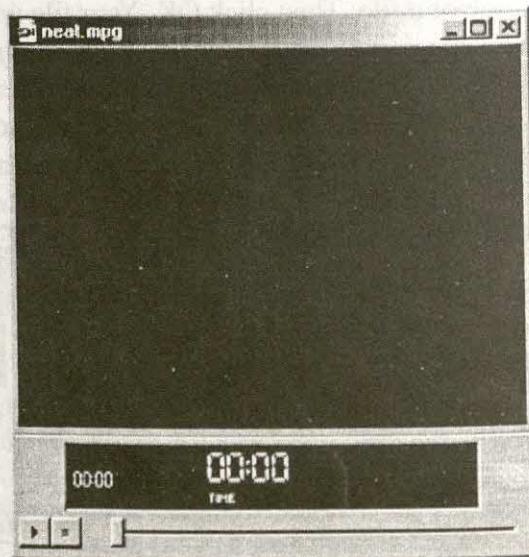
Open the program from Start | Programs | Accessories | Entertainment | ActiveMovie Control (for Windows 98) or Start | Programs | Accessories | Multimedia | ActiveMovie Control (Windows 95). You will first get the Open dialog box. Choose a file to open. Now click on the "Play" button on the left to start playing the movie. Some of the most frequently used movie types are as follows :

MPEG - a movie format
AVI - Another Movie format
MOV - Also a movie format
WAV - Audio file
AIF - Another audio file type
AU - Audio format

The program has a display box that shows the total time of the movie and the time elapsed in the center.

Do it yourself

1. Using the Find option from the start menu try to find the different types of media files in your computer.
2. Record a poem and play the same using Sound Recorder.
3. Using the Media Player and ActiveMovie Control try to find out the files that can be opened by these programs.
4. Search the Internet about other multimedia software.

Chapter : 9

The World of Internet

We will learn about

☺ **A brief look at Networks**
☺ **The Internet**
☺ **Connecting to the Internet.**
☺ **Email**
☺ **The World Wide Web**
☺ **Websites**

9.1 A brief look at Networks

We use the word networks quite often in our daily life. Think it over and you will see many kinds of networks; from small fishing nets to the railway networks that connects stations throughout the country. However, in the field of computers, networks are formed by linking two or more computers together with cables. The diagram on the right shows how a simple computer network can be organised.

The different uses of the networks :

When computers are connected, people easily share things. For example, the network provides a convenient means of copying documents from one computer to another. This is a useful utility especially for people who work together in groups.

Sometimes many people have work on the same files. Networks help them save time and quickly achieve their goal.

With a network people can also share resources like printers. That is, there might be a network with twenty computers, but only one computer attached to a printer. In this case, anyone on the network would be able to print a document from this computer. You must need to give the print command, and it goes from your computer through the network to the printer. Thus, schools, companies and organisations don't need to buy printers for every machine.
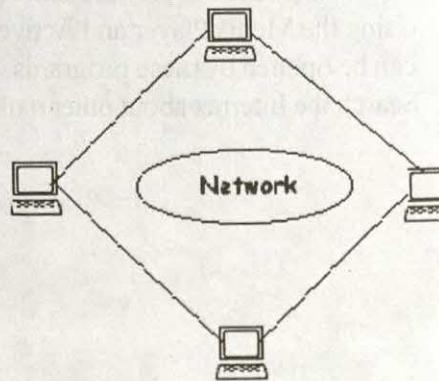
Network

9.2 The Internet

The Internet is a special combination of three things: Computers, Information and People.

Computers: There are many computers around the world that are connected to each other. They are connected by network cables, telephone lines and satellites.

Information: There are different kinds of information stored on these computers

People: There are millions of people around the world who access the information and also communicate with the each other through these networked computers.

Just as a network connects many computers in an office or school, the Internet has millions of computers connected to each other. It is like a huge, worldwide network. And because these computers are connected people can send and receive information from one computer to another -all the way across the globe!

Some of the things that you can do with the Internet.

↗ Send messages to, and receive messages from people around the world,

↗ Follow the phases of a space shuttle launch, and watch a video of astronauts in action,

↗ Get help solving a science problem,

↗ Read poems written by children from around India and the world,

↗ Enter a math competition with your classmates,

↗ Find out the latest cricket scores,

↗ Learn a new hobby, such as flower arrangement, paper folding or perform magic tricks,

↗ Chat with your friends residing in any part of the world,

↗ Buy a gift for your mother on her birthday,

9.3 Connecting to the Internet

An Internet connection is, in some ways similar to a cable TV connection. With cable TV, there is a cable service provider. This is a local company that has cables laid

Internet

Phone line

Computer   Modem   Internet Account
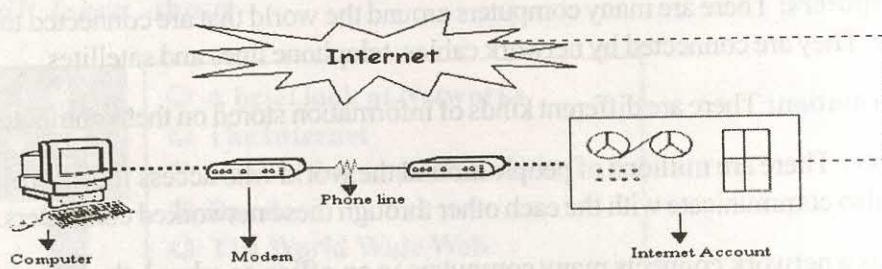
throughout the city. If you want to get cable TV, you pay the company a subscription fee, and they connect your TV to their cable network. With the Internet, there is an **"Internet Service Provider"** (or ISP). The ISP is similar to a cable TV provider, in that you pay them a subscription fee, and they give you an Internet account. However, the difference is that you don't connect to them with a television and cable. Instead, you connect to them with a computer and modem through a telephone line.

A **modem** is a small device that connects to the computer. When you want to connect to the Internet, your computer send instructions to the modem.

The modem then uses the telephone line to make a phone call to the ISP's computer (which also has a modem). Once a connection is made between the two modems, the computers are connected. At this point your computer is connected to the Internet. You can then use the different Internet services available, such as e-mail and the World Wide Web. When you finish using the Internet, you give an instruction to your computer to disconnect. The modem then hangs up, and your computer is no longer connected to the Internet.

9.4 Email

The most common use of the Internet is sending and receiving electronic mail (e-mail). **E-mail** refers to messages that are typed on one comptuer, and sent through the Internet to another computer. An e-mail message can be written quickly in an e-mail program, and then sent to a recipient anywhere in the world. Messages travel through the Internet, going from one computer to another in just minutes.

People use e-mail to send messages for many reasons. Professionals use it as a means

of conducting business or for providing services,guidance and information to customers. Organisations use e-mail to inform their members of news and events. Others use it for personal reasons, such as contacting friends and family members.

In many ways, e-mail does the same thing that postal mail does. However it has many advantages.

E-mail is faster - a letter can take days, but e-mail takes only minutes.

There is no charge for e-mail (although you do have to have a computer and Internet account) People save money especially with international communications.

It is easier to send an e-mail message. There is no paper, no stamps, no envelopes or having to find a mailbox or post office.

Sending an e-mail message

Whenever you create a new mail message, you have to tell the computer whom you are sending it to. This is done by putting the recipient's e-mail address into the Address field at the top of the message. Jult like an address on a postal letter, an e-mail address is responsible for getting your mail to the persom. Here are some examples of e-mail addresses.

vidya_g@del2.vsnl.net.in
sales@business.com
martin_g@ps.kentucky.edu
mishra_amit@safety.org

Pronouncing e-mail addresses

The previous e-mail addresses are pronounced as follows:

vidya jee at del two dot V S N L dot net dot in
sales at business dot com
martin jee at P S dot kentucky dot E D U
mishra dot amit at safety dot org

When pronouncing e-mail address, make sure that you do not say the "@" as at the rate or at sign; instead we say 'at' for short.

Subject

Under the address field is another field named Subject. The **Subject** field is where you write the topic of your message. This is helpful for the recipient, because when he receives many e-mail messages at one time, he first sees just the sibject. This emables him to quickly identify the important messages, which he would want to read first. The subject is also helpful, because if the recipient wants to find that message again later, he doesn;t have to go back and read all of his messages. He can quicklly look at only the subjects, and the one he is looking for.

A subject can have anything (or nothing) written in it. However, most subjects are between one and five words long. Here are some examples subjects:

Hello

My introduction

Need a favour

Teacher's meeting rescheduled for Tuesday

Awaiting you arrival etc.

Writing a Message

After your address and subject, it's time to write your message.

You can write whatever you want the same way you can with any other letter. When you have finished typing, you just need to push the "Send" button.

After you send your message, the recipient is likely to reply to you.

E-mail for students

Here are a number of ways that students can use e-mail.

A a study tool

Let us say you are studying about eskimos in your social science class. One way to learn about them is through your textbook. However, the textbook has limited information. With e-mail, you could contact Eskimo children and find out all kinds of things that your book might bot even mention. For example, the book moght say theat eskimos live in igloos. Yet, if you contacted an eskimo by e-mail you would quickly find out that many eskimos live togather in regular houses.

Keeping in touch with your friends and relatives

Perhaps you have friends or relatives living far away. You may even have relations who live in another country. E-mail is a great way to keep in touch with them. Long distance telephone calls can be very expensive, so e-mail is a nice inexpensive alternative.
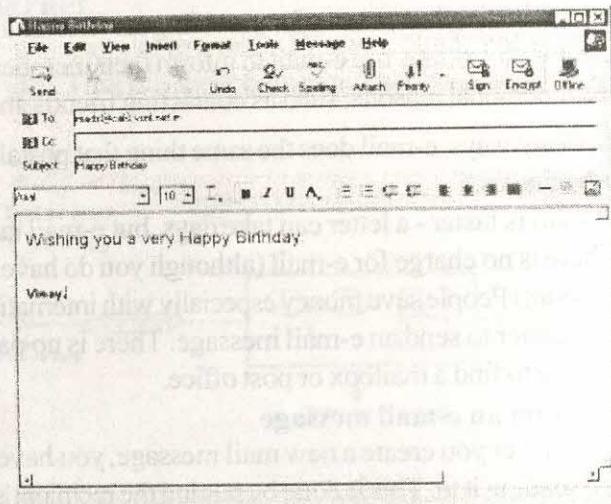
9.5 The World Wide Web

E-mail is one activity that is done through the Internet. People use it as a means of direct communictation and exchanging information with others. However, there is another

aspect of information exchange that is also very powerful: The World Wide Web.

The **World Wide Web** (also called WWW, or the Web) refers to millions of digital pages of information that are kept on computes all over the world. These "web pages" contain text on almost any subject you could thing of education, cartoons, sports, dance, dramas, fashion, business and more!

They include not only text, but also images, sounds, movies and animations.

People create web pages about different topics, and put them on a special "host" comptuer. Then other people who are connected to the Internet, can look at these pages on their own computers at home, in school or at work.

Although, both the web and e-mail are used through the Internet, they are quite different. E-mail is always sent directly to a person. However, web pages are kept in a computer, and can be read by anyone at any time. In fact, the person who creates the web pages usually does not know who else is reading it! In addition, the content of a web page is usually quite different from that of an e-mail message. E-mail messages often contain personal information that people would like to keep private. On the other hand, web pages can be seen and read by anyone on the Interent, so they typically have information that is meant to be seen by everyone.

9.6 Websites

People make web pages for may different reasons:

1. Educational Institutions - to provide services and information to students and teachers.

2. Companies - to provide customers with information about their products.

3. Hobbyists - to entertain themselves and others

In most cases, web pages don't come alone. That is people usually create many web pages on their particular topic. This collection of related web pages is alled a **website**.

Each website has a main page. A home page typically has text that explains what the website is about, alongwith a picture or logo. There is also a list of ther pages that in the website. In order to go from one page to the next, you click in the "links".

Linksare words or pictures in a web page, which when clicked, will display another page. Some links will even bring you to another website. On a web page, links in text

appear as underlined text. If you point our cursor on a link, the cursor will change to a pointing finger.

Web Browser

To view web pages, you need a special program called web browser. The web browser can fetch a web page from a computer anywhere on the Internet, and show that page for you in seconds.

How to go there ?

In the same way that houses and buildings have postal address or e-mail addresses, web pages also have their own addresses. Here are some examples of web page addresses:

http://sun.java.com/
http://www.thestateman.org/headlines.htm
http://www.ignou.edu/mca/admission.htm
http://www.cricket.org/india/tour/scores/ratings.htm

In order to see web pages with your web browser, you have to type the address into the Address box. To visit the Aces Infotech home page, you type the address www.acesinfotech.com. After a while the web pages comes into the screen of the web browser. Then you can click on the links to visit to other pages.

Pronouncing URL's

This URL http://www.discoverindia.com is pronounced like this:
H T T P colon slash slash W W W dot discoverindia dot com.

Sometimes, people don't even say the "http" part. They just start with "www."

Searching

Unlike yellow pages, directories such as Yahoo (www.yahoo.com) also have a special search feature. This allows you to type in a word or phrase into a box on the web page, and the comptuer will search the directory for pages that match your criteria. It will then show a list of links to these pages. You can click on the various links and visit the website.

For example, you are were interested to find out more about astronauts. You check the science category and browse through the listings until you found a page of interest. Another way would be to use the search box. You could simply type the word

"astronaut" in the search box, and press the "search" button. You could see a list of websites that are related to astronatus. Lycos (shown below) is one such search engine frequently used.

Other Computer Titles of Interest

SCHOOL COMPUTER TEXT BOOKS

Computer Horizons Book 1	S. Addy
Computer Horizons Book 2	S. Addy
Computer Horizons Book 3	S. Addy
Computer Horizons Book 4	S. Addy
Computer Horizons Book 5	S. Addy
Computer Horizons Book 6	S. Addy
Computer Horizons Book 7	S. Addy
Computer Horizons Book 8	S. Addy
Computer Horizons Book 9	S. Addy
Computer Horizons Book 10	S. Addy

Rs. 75/-